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2. To develop an interest in and conservation of the birds of the Middle East.
3. To develop a mutually beneficial working relationship with all environmental and conservation bodies and natural history societies in and concerned with the Middle East.

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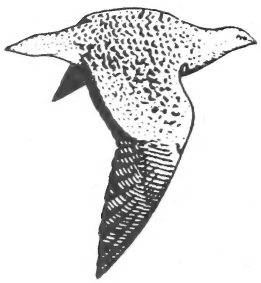

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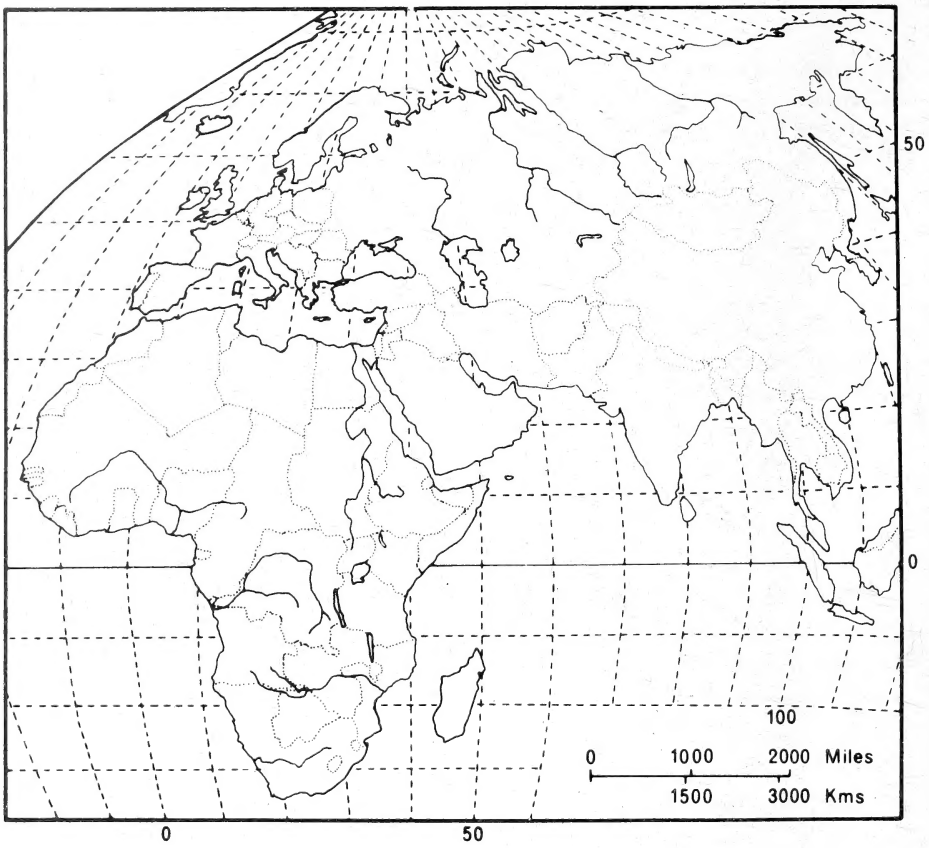
EDITORIAL

It is a pleasure to present *Sandgrouse* 9 which is devoted entirely to the Society's first organised expedition – to North Yemen in 1985. I am sure readers will agree that it was a particularly well organised and productive expedition of which the leaders and participants can be justly proud.

As is usual, for the scientific names of birds we follow the *List of Recent Holarctic Bird Species* by K. H. Voous (B.O.U., London, 1977). Observant readers will notice that certain English vernacular names are different from those used previously; we hope these changes reflect general usage.

I wish to record my thanks to Michael and Gillian Rands, Richard Porter and to the Editorial Committee for their help and advice in producing this issue and particularly to Duncan Brooks without whose assistance and practical help in proof-reading and other ways there could not have been this 'Yemen Special'.

Donald Parr



An equal-area map of the Palaearctic, Oriental and Afrotropical zoogeographical regions. O.S.M.E.'s area lies in the centre of the map (see *Notes to Contributors*) which also embraces the breeding grounds and winter quarters of the vast majority of the migrants that pass through the area.

THE ORNITHOLOGICAL SOCIETY OF THE MIDDLE EAST'S EXPEDITION TO NORTH YEMEN OCTOBER-DECEMBER 1985: AN INTRODUCTION

by

M. R. W. Rands, R. F. Porter, D. J. Brooks and G. F. Rands

INTRODUCTION

This paper provides an introduction to the OSME North Yemen Expedition 1985 – which collected the data that forms the basis of the remaining papers of this volume of *Sandgrouse*. It is intended as a preface to the more detailed texts and briefly outlines the objectives of the Expedition, lists the personnel involved and acknowledges the enormous amount of support received from a wide variety of sources. For the Expedition's itinerary and coverage, see Brooks *et al.* (1987).

Sandgrouse 9 is in no way intended to provide a comprehensive coverage of the data obtained during the OSME Expedition; rather it presents a selection of some of the most interesting and relevant (to the Society) ornithological studies carried out. A non-specialist report (Rands *et al.* 1987), summarising the major scientific findings and logistical organisation of the Expedition and laying out suggested recommendations for the conservation of Yemen's birds and their habitats, is available from OSME (price £4.00), and further papers describing the Expedition's scientific work are in preparation (see below). Copies of all published and unpublished records and material are held by the Expedition leaders and in the OSME archives.

AIMS OF THE EXPEDITION

The overali objective of the Expedition was to increase substantially the ornithological knowledge of North Yemen with particular emphasis on the species and habitats potentially requiring conservation action. There were four major aims:

(1) To study 13 bird species whose global distribution is centred on and largely confined to North Yemen (Philby's Rock Partridge *Alectoris philbyi*, Arabian Red-legged Partridge *A. melanocephala*, Arabian Woodpecker *Dendrocopos dorae*, Arabian Accentor *Prunella fagani*, South Arabian Wheatear *Oenanthe lugens lugentoides*, Yemen Thrush *Turdus menachensis*, Yemen Warbler *Parisoma buryi*, Arabian Golden Sparrow *Passer euchlorus*, Arabian Waxbill *Estrilda rufibarba*, Arabian Serin *Serinus rothschildi*, Yemen Serin *Serinus menachensis*, Golden-winged Grosbeak *Rhynchostruthus socotranus* and Yemen Linnet *Carduelis yemenensis*,). Particular emphasis was placed on obtaining information concerning their status, distribution and habitat requirements (for both feeding and breeding), and likely threats to their survival. Additional information was collected on plumage characteristics (both in the field and, where possible, in the hand), voice, biometrics and behaviour. Papers on each of these species are presented in this volume.

(2) To survey the bird communities supported by the major habitats of the Tihamah (the narrow coastal plain) in order to evaluate the effects of vegetation clearance, agriculture and associated human presence on the birds and their conservation status. Systematic sampling was carried out to measure the relative abundance of bird species in each habitat and to determine the way in which vegetation types were used by each species. Some of the data collected in this survey are presented in Brooks *et al.* (1987), in this volume, and general conservation recommendations are given in Rands *et al.* (1987) and are being prepared for submission to *Biological Conservation*.

(3) To study the status, habitat and breeding behaviour of the Arabian Bustard *Ardeotis arabs*, a species whose entire Arabian population is now probably confined to North Yemen. The records obtained by the Expedition are summarised in Brooks *et al.* (1987), in this volume, and more general observations (including diagrammatic representations of the advertising display) are given in Rands *et al.* (1987). A full account of the display and conservation recommendations for this species are being prepared for submission to *Oryx*.

(4) To document the autumn migration of raptors and other large soaring birds that pass through North Yemen when moving from their Palaearctic breeding grounds to winter in Africa. While this was intended to be a major aim of the Expedition, logistical difficulties prevented detailed research on the subject. Nevertheless, some evidence of large-scale migration was obtained and is summarised by Porter and Christensen (1987) in this volume.

In addition to these primary objectives, the Expedition had three further aims:

(5) To collect casual observations of birds throughout the country to increase the general ornithological knowledge of this little-explored part of Arabia. The major paper in this volume (Brooks *et al.* 1987) presents the Expedition's records and relates them to previous observations.

(6) To obtain data for the Atlas of Breeding Birds in Arabia project (a long-term project, coordinated by M. C. Jennings, to map the breeding distribution of birds throughout the Arabian peninsula and gain as much information as possible about the breeding biology of Arabia's avifauna).

(7) To make a short documentary film of the Expedition's work highlighting the variety of birds and habitats found in North Yemen and the need for their conservation. This film has been produced with the assistance of Cable and Wireless plc, and video and 16 mm. copies can be borrowed from OSME (subject to certain conditions). Two versions of the film are available, one in English, the other in Arabic, and both include Yemeni bird song and music on the sound track. A brief description of the major sequences in the film is given in Rands *et al.* (1987).

EXPEDITION PERSONNEL

Thirteen OSME members took part in the Expedition and their names and periods in North Yemen are given below.

Christopher Bowden	(CGRB)	Ornithologist and bird ringer	9 Oct – 4 Dec
Duncan Brooks	(DJB)	Ornithologist and mechanic	9 Oct – 6 Nov
Steen Christensen	(SC)	Ornithologist	6 Nov – 4 Dec
Michael Evans	(MIE)	Ornithologist	9 Oct – 4 Dec
Michael Everett	(MJE)	Ornithologist	6 Nov – 4 Dec
Phillip Hollom	(PADH)	Ornithologist and sound recordist	6 Nov – 20 Nov
Arthur Honeywell	(RAH)	Cameraman and ornithologist	9 Oct – 4 Dec
Jane Madgwick	(FJM)	Botanist	9 Oct – 4 Dec
Rodney Martins	(RPM)	Ornithologist and ABBA coordinator	9 Oct – 4 Dec
Richard Porter	(RFP)	Co-leader and ornithologist	9 Oct – 6 Nov
Gillian Rands	(GFR)	Treasurer and secretary	2 Oct – 4 Dec
Michael Rands	(MRWR)	Co-leader and ornithologist	2 Oct – 4 Dec
Nigel Redman	(NJR)	Ornithologist	9 Oct – 6 Nov

ACKNOWLEDGEMENTS

Space has not permitted us to acknowledge in each of the papers that follow all the assistance that the Expedition received, and we therefore take this opportunity to thank those individuals, organisations and sponsors without whom it could not have taken place.

Our first thanks must go to the Government of the Yemen Arab Republic for allowing us to visit their remarkable country; to the Yemen Centre for Research and Studies (our academic sponsor in Yemen) and the Yemen Embassy in London. For assistance and hospitality in Yemen we must thank J. and L. Adams, J. Cambridge, B. and J. Evans, S. Fairman, T. and V. Hanson, C. and I. Harvey, P. Howell-Davies, D. and J. Karpowicz, P. Martin, W. McKinley, D. Nauta, G. Oram, D. Perkins, R. Polley, D. Robertson, S. Robinson, A. W. Hayel Saeed, R. Self, H. E. D. Tatham, C. Van Schoot and T. Williams. In England we are most grateful to N. Aly, A. Bakewell, R. Bidwell, K. Child, N. J. Collar, P. D. Goriup, N. Hepper, B. Juel-Jensen, J. Ormsby, F. Steele and F. Stone for their help.

Major sponsorship was received from Cable and Wireless plc, Longulf Trading (UK) plc, Abdul Wasa Hayel Saeed, OSME and D. Robertson. Support was also given by Shell International Petroleum Co. Ltd, Joannou and Paraskevaides, Yemen Bank for Reconstruction and Development, Explorers Club, Ernst and Whinney, British Ornithologists' Union, Percy Sladen Memorial Fund, Hosking Equipment Ltd, Sir M. MacDonald and Partners, Allot and Lomax, and Polaroid UK. The Expedition was endorsed by the International Council for Bird Preservation and approved by the Royal Geographical Society. Keith Brockie kindly drew the displaying Arabian Bustard and Steen Christensen generously provided the remaining line drawings in this volume.

Finally, on behalf of all Expedition members, we wish to thank the Council of OSME for their support, advice and encouragement throughout the planning and execution of what we hope will be the first of many OSME expeditions.

REFERENCES

BROOKS, D. J., EVANS, M. I., MARTINS, R. P. & PORTER, R. F. 1987. The Status of Birds in North Yemen and the Records of the OSME Expedition in Autumn 1985. *Sandgrouse* 9:

PORTER, R. F. & CHRISTENSEN, S. (1987). Autumn Migration of Raptors and other Soaring Birds in North Yemen. *Sandgrouse* 9:

RANDS, M. R. W., RANDS, G. F. & PORTER, R. F. 1987. *Birds in the Yemen Arab Republic: report of the Ornithological Society of the Middle East Expedition, October-December 1985.* Ornithological Society of the Middle East.

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R. F. Porter, Royal Society for the Protection of Birds, The Lodge, Sandy, Beds. SG19 2DL, ENGLAND.

Duncan J. Brooks, The Birds of the Western Palearctic, c/o British Museum (Natural History), Tring, Herts. HP23 6AP, ENGLAND.

G. F. Rands, Elsevier Publications Cambridge, 68 Hills Road, Cambridge CB2 1LA, ENGLAND.

THE STATUS OF BIRDS IN NORTH YEMEN AND THE RECORDS OF OSME EXPEDITION IN AUTUMN 1985

by

D. J. Brooks, M. I Evans, R. P. Martins and R. F. Porter

INTRODUCTION

The ornithology of North Yemen was little known until the late 1970s, but since then the country has been increasingly studied and this new interest culminated in the Ornithological Society of the Middle East's Expedition there from 9 October to 4 December 1985 (see Rands *et al.* 1987). In presenting the Expedition's records we have taken the opportunity also of summarising the status of all species, including the information (largely unpublished) which has become available since the review by Cornwallis and Porter (1982).

EXPEDITION COVERAGE

The climate and major habitat zones of the country were described by Cornwallis and Porter (1982) and our terminology follows theirs, though with the addition of the name 'southern uplands' for the distinctively lusher and flatter southern part of the western ramparts, especially the Ta'izz region (see *Figure 1* and the accompanying gazetteer for locations of places, and Cornwallis and Porter 1982 for maps of habitat zones and topography). The proportion of time spent by the Expedition in each of the main habitat zones (listed here from west to east) was:

Tihamah (coastal plain)	46%	Highland plateau	21%
Tihamah foothills	8%	Eastern flanks	1%
Western ramparts	22%	Interior desert	2%

The Expedition had the following itinerary (sites on the Tihamah are in italics):

October

9-10 Sana'a
11 Kawkaban
12 Sana'a – *Hodeidah*
13-18 *Hodeidah, Al Mansuriyah*
18 Jabal Bura'
19 *Wadi Mawr*
20-24 *Hodeidah, Al Kadan*
25 *Al Luhayyah*
26 *Ra's Katanib*
27 *Al Kadan*
28 *Ra's Katanib* – Ma'bar – Sana'a
29 Sana'a, Sana
30 Sana'a – Ta'izz
31 Ta'izz

November

1 Wadi Duba
2-3 Ta'izz – *Al Khawkhah* – Ta'izz
4 Mafraq al Mukha, Ta'izz
5 Ta'izz – Sana'a
6-7 Sana'a, Kawkaban
8 Ma'bar
9 Kawkaban

November (continued)

10-12 Al Mahwit
13 *Al Kadan, Al Qutay'*
14 *Hodeidah* – Manakhah – Sana'a – Sa'dah
15 Sa'dah
16 Sa'dah – Sana'a
17 Sana'a – Ta'izz
18-19 Ta'izz, Mafraq al Mukha
20 At Turbah
21 Ibb
22 Ta'izz – Mafraq al Mukha – *Al Fazzah*
23 *Al Fazzah – Hodeidah*
24 *Al Mansuriyah, Al Qutay'*
25-26 *Wadi Mawr, Harad, Al Luhayyah*
26-27 Jabal Bura', *Al Qutay'*
29 *Hodeidah* – Jabal an Nabi Shu'ayb – Sana'a
30 Wadi Dahr

December

1-2 Sana'a – Ma'rib – Sana'a
3 Kawkaban
4 Sana'a

BROOKS, D. J., EVANS, M. I., MARTINS, R. P. & PORTER, R. F. 1987. The Status of Birds in North Yemen and the Records of OSME Expedition in Autumn 1985. *Sandgrouse* 9: 4-66.

OTHER SOURCES AND ACKNOWLEDGEMENTS

Cornwallis and Porter (1982) summarised observations known to them up to spring 1982, and readers should refer to their paper for a summary of the seasonal and geographical coverage which these records involved.

Observations by expatriate residents have been a major source of information since 1980, and, in the Systematic List which follows, many of these records are credited to individuals (see below), while others are ascribed to the Nature and Ornithological Society of Yemen (formerly the Ornithological Society of North Yemen), having been taken from the society's newsletters and record files; readers interested in the society or its records should contact the secretary, M. Halliday, PO Box 5713, Ta'izz, Yemen Arab Republic.

Records also come from the following recent visits by non-residents:
Brockie (1985): 7 January – 15 February 1982
A. Helbig (see *OSME Bull.* 1983, 10: 17): 28 May – 10 June 1982
R. F. Porter and N. J. Redman: 15 October – 5 November 1982
R. F. Porter: 20 December 1983 – 13 January 1984
Martins (1986): 8–24 April 1986

The major contributors of unpublished information to the Systematic List are acknowledged in each case by their initials:

J. S. Ash	S. Fairman	Nature and Ornithological Society of Yemen	D. & D. Perkins
M. A. S. Beaman	J. Karpowicz		R. F. Porter
M. I. Evans	R. P. Martins		N. J. Redman
J. Finch	S. C. Madge		

The names of other contributors are given in full in the appropriate position in the text, and we are glad to acknowledge our debt to all these people – as also to M. C. Jennings for supplying records from elsewhere in Arabia, and to Mrs. F. E. Warr, whose immaculate compilation of records, kept over the years, has saved us no end of work.

COMMENTS ON THE SYSTEMATIC LIST

The *first paragraph* of each species account details the Expedition's observations. Except where stated, figures quoted for the numbers of birds recorded represent day-totals summed over the whole period in the field (i.e. 'bird-days'). Generally speaking, this gives a good picture of the relative abundance of species at that time of year, but it may inflate the apparent abundance of scarce species whose habitat was visited on several days; in the worst cases this has been pointed out in the text. Observations relevant to breeding seasons are given where available. Descriptions of rare species are usually not provided here, though, where appropriate, they have been filed in the OSME archives.

The *second paragraph* of each account summarises the species' known status in North Yemen, though in making these assessments we are aware that a number of gaps remain in the coverage of the country. Thus there are very few observations in May and June, and some regions have hardly been investigated at any time of year: these comprise (1) most of the northern third of the country, including (a) the extensive mangroves north of Al Luhayyah and (b) the northern part of the western ramparts and highlands, especially between Huth (16°14′N 43° 58′E) and Sa'dah, where some natural woodland and juniper scrub still survive (Al-Hubaishi & Müller-Hohenstein 1984); also (2) except for the Ma'rib area, all the eastern areas (including the eastern flanks) bordering the interior deserts.

Several species not seen by the Expedition have only been recorded once or twice in North Yemen. In most of these cases we have not seen descriptions and so are unable to adjudicate on the records – which are thus presented at face value. In other instances (noted in the text) descriptions have been received and are filed in the OSME archives.

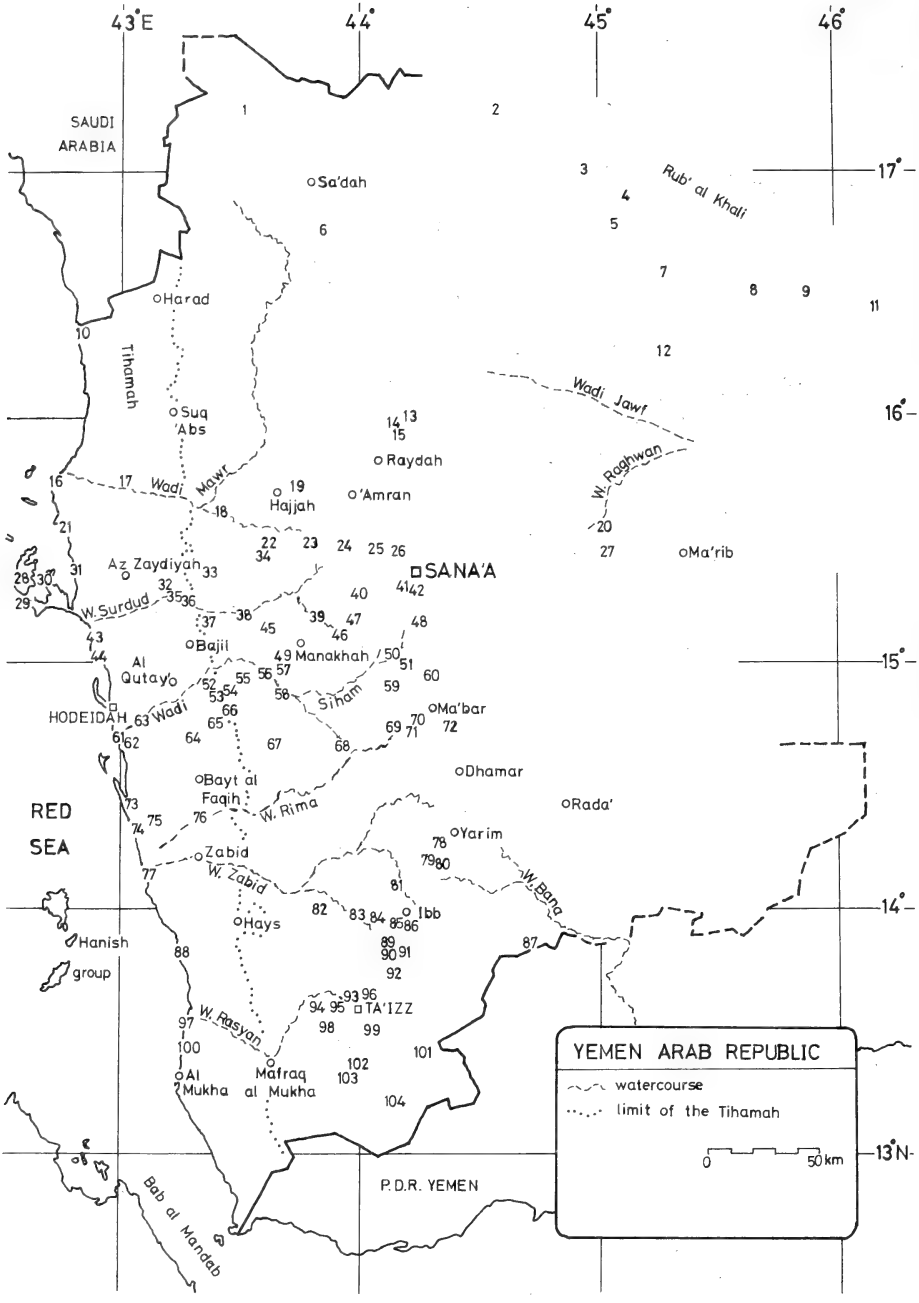


Figure 1: North Yemen (Yemen Arab Republic), showing all localities mentioned in papers in *Sandgrouse* 9. To be read in conjunction with the gazetteer opposite.

GAZETTEER

The positions of localities marked * are shown by name on the map (*Figure 1*).

Jabal = mountain Jibal = mountains Wadi = watercourse

11 Abu Ka'b
62 Ad Durayhimi
91 Ahmar Pass
52 Al Akamah
48 Al 'Aljam
77 Al Fazzah
57 Al Hajjaylah (= Hajeilah)
76 Al Husayniyah
36 Al Kadan
21 Al Khawbah
88 Al Khawkhah
16 Al Luhayyah
22 Al Mahwit
32 Al Manarah
64 Al Mansuriyah
74 Al Maraziqah
65 Al Midman
63 Al Mukayminiyah
* Al Mukha
25 Al Munaqqab
92 Al Qa'idah
* Al Qutay'
83 Al 'Udayn
43 Al 'Urj
* 'Amran
97 Al Ru'ays
30 As Salif
53 As Sarhah
66 As Sukhnah
— As Suwayq (Brockie 1985: exact locality unknown, probably near Al Fazzah)
32 At Tawilah
18 At Tur
04 At Turbah
* Az Zaydiyah
17 Az Zuhrah

45 Bab al 'Ayn
* Bab al Mandab
* Bajil
* Bayt al Faqih
42 Bayt Baws

70 Dawran
* Dhamar
14 Dhi Bin
90 Dhi Sufal

— El Behr (Thiollay & Duhautois 1976; exact locality unknown, most probably refers to Al Barh 13°27′N 43°43′E)

35 Gerabi farm
73 Ghulayfiqah

41 Haddah, Sana
94 Hajdah
* Hajjah
* Hanish group of islands
* Harad
— Hataban island c. 25 km off Al Luhayyah (Phillips 1982)
— Haycocks islets 15°10′N 42°07′E
* Hays
95 Hidhran (=Hadran)
* Hodeidah

* Ibb
31 Ibn 'Abbas

69 Jabal Abb Mahdi
37 Jabal al Jama'
6 Jabal al Khattarin
40 Jabal an Nabi Shu'ayb
55 Jabal Bura'
71 Jabal Dawran
98 Jabal Habashi
99 Jabal Sabir
1 Jabal Umm Laylah
33 Jibal Milhan
67 Jibal Raymah
85 Jiblah

28 Kamaran island
24 Kawkaban, Shibam
38 Khamis Bani Sa'd
47 Khamis Madhyul (=Suq al Khamis)
80 Kitab
19 Kuhlan 'Affar
— Kitamah island (=Kutaman, Kutman) 15°42′N 42°17′E

* Ma'bar
68 Madinat ash Shirq (=Madinat al 'Abid)
46 Mafhaq
* Mafraq al Mukha
* Manakhah
* Ma'rib
8 Mataww
2 May'ayn hills
10 Midi
9 Mushainiqa well

60 Naqil Yislah
61 Nukhaylah

59 Qa' al Haql (a plain near Wadi 'Ashshar: records of MIE)
78 Qa' al Haql (a plain south of Yarim: records of Phillips 1982)
87 Qa'tabah

* Rada'
29 Ra's al Bayad
44 Ra's Katanib
* Raydah
72 Risabah
* Rub' al Khali
58 'Rubu

54 Sabt al Mahrab (=Suq as Sabt)
* Sa'dah
84 Sa'ilat al 'Ayn
101 Sa'ilat Warazan (=Wadi Warazan)
41 Sana, Haddah
* Sana'a
4 Sha'ib Qurra
24 Shibam, Kawkaban

7 Shudhayf
27 Sirwah
79 Sumarah pass
* Suq 'Abs

* Ta'izz
93 Ta'izz sewage lagoons
* Tihamah

96 'Usayfirah

82 Wadi Adina
56 Wadi al Walajah
103 Wadi an Nashamah
51 Wadi 'Ashshar
13 Wadi Attaf
* Wadi Bana

50 Wadi Buqlan
26 Wadi Dahr
89 Wadi Duba
102 Wadi Hammam 'Ali
15 Wadi Jadr al Hadd
* Wadi Jawf
5 Wadi Khabb
75 Wadi Kuway
20 Wadi Makhdarah
* Wadi Mawr
86 Wadi Maytam
34 Wadi Nawiyah
* Wadi Raghwan
* Wadi Rasyan
* Wadi Rima
81 Wadi Sahul
3 Wadi Sayh

* Wadi Siham
39 Wadi Subah
* Wadi Surdud
101 Wadi Warazan (=Sa'ilat Warazan)
12 Wadi Wasat
* Wadi Zabid
49 Wasil

100 Yakhtul
* Yarim

* Zabid
— Zubayr island 15°03'N 42°10'E

SYSTEMATIC LIST

Tachybaptus ruficollis **Little Grebe**

Recorded at three sites: at Hodeidah sewage lagoons numbers increased from 24 on 13 Oct to 47 on 23 Nov; at Ta'izz sewage lagoons and Ta'izz dam numbers increased from 195 on 31 Oct to 272 on 19 Nov. A single bird on a Tihamah pool near Jabal Bura' on 27 Nov. At Ta'izz 2 pairs were feeding chicks on 31 Oct.

Not recorded until Oct 1982 (RFP, NJR). Since then found as a breeding resident on two fresh water areas and recently created sewage lagoons near Ta'izz and Hodeidah. Breeding activity (nest building to chick feeding) observed from Feb to Oct with small young being fed by parents in May-Jul and Oct (SF, NOSY). In addition, evidence suggests winter immigration.

Podiceps nigricollis **Black-necked Grebe**

Recorded at two sites: at Hodeidah sewage lagoons numbers increased from 3 on 13 Oct to 7 on 23 Nov; at Ta'izz sewage lagoons, increased from 4 on 31 Oct to 7 on 19 Nov.

Not recorded until Feb 1982 (Brockie 1985), but since then found in very small numbers at recently created sewage lagoons at Hodeidah (up to 10) and Ta'izz (up to 10) throughout the year. Probably an uncommon and local non-breeding visitor but a pair were nest building at Ta'izz on 22 Jun 1985 though repeatedly chased off by Little Grebe (DDP). As with the previous species, this grebe's recent presence is almost certainly the result of the creation of suitable habitat.

Puffinus pacificus **Wedge-tailed Shearwater**

On 3 Nov single birds were recorded off Ar Ru'ays and Al Khawkhah during very windy conditions.

The only previous record was of at least 4 off R'as al Bayad on 2 Jul 1984 (MIE). On 30 Jun 1945 Phillips (1947) recorded a number of large petrels 25-80 km offshore that were apparently either this species, Flesh-footed Shearwater *P. carneipes* or Jouanin's Petrel *Bulweria fallax*; in Jul 1984 birds that were either Wedge-tailed or Flesh-footed Shearwaters were observed in flocks of up to c. 70 (MIE).

Puffinus lherminieri **Audubon's Shearwater**

Five off Ar Ru'ays on 3 Nov and 2 off Al Fazzah on 23 Nov.

Probably occurs commonly and regularly off the coast but there are only c. 6 other records during Apr, Nov and Dec involving associations of up to 100 birds (Cornwallis & Porter 1982; MASB, SCM, RFP).

Hydrobatidae **Storm-petrel sp.**

None recorded during the Expedition.

At least 8 recorded 25-80 km. offshore on 30 Jun 1945 (Phillips 1947) and 1 off the coast on 19 Sep 1983 at Al Khawkhah (MIE). The descriptions strongly suggest Wilson's Petrel *Oceanites oceanicus*, which is the most likely white-rumped petrel to occur. A few birds, said to be Storm-petrel *Hydrobates pelagicus*, were recorded "in the southern Red Sea", Sep 1927 (Alexander 1929).

Phaethon aethereus **Red-billed Tropicbird**

Not recorded during the Expedition.

Phillips (1947) identified 2 White-tailed Tropicbirds *P. lepturus* near Zubayr island (c. 60 km. offshore) on 30 Jun 1945 but his description indicates they were probably Red-billed. The only other records are of 3 off Al Khawkhah on 12 Apr 1980 (MASB, SCM) and c. 25 displaying at Kitamah island on 18 Oct 1979 (Phillips 1982).

Sula dactylatra **Masked Booby**

Not recorded during the Expedition.

A few were nesting on the Haycocks islets (in the southern Red Sea, closer to Ethiopia than to the North Yemen mainland) in Nov 1961 (Morris 1962). About a tenth of the numerous boobies seen near Zubayr (c. 60 km. offshore) on 30 Jun 1945 by Phillips (1947) were adult Masked, the remainder were not adequately identified. The only record from the mainland is one off Al Khawkhah on 13 Apr 1980 (MASB, SCM), and a snowy-white booby off there on 19 Sep 1983 was either this species or Red-footed Booby *S. sula* (MIE).

Sula leucogaster **Brown Booby**

14 recorded, 13 Oct-3 Nov, between Al Mukha and Hodeidah with a maximum of 5 on 13 Oct off Hodeidah.

In the Hanish group of islands in the southern Red Sea, 200 birds were seen in Jun 1963 (Gallagher *et al.* 1984) and large numbers were found nesting on the Haycocks islets (closer to Ethiopia than to the North Yemen mainland) in Nov 1961 (Morris 1962). Also some evidence to suggest breeding on the island of Kitamah (Phillips 1982). Occurs throughout the year offshore, often close in, even in calm conditions.

Phalacrocorax nigrogularis **Socotra Cormorant**

Not recorded during the Expedition.

Cormorants, either unidentified or considered to be Socotra have been recorded off the coast between Hodeidah and Al Mukha on 8 occasions. 1-3 birds, from Nov or Dec to Mar (Brockie 1985; JF, JK, DDP). One Socotra Cormorant found just north of Perim island in the Bab al Mandab, Apr 1928 (Alexander 1929), may have been in North Yemen waters.

Pelecanus onocrotalus **White Pelican**

Not recorded during the Expedition.

While Meinertzhagen (1954) reported it as fairly common on both sides of the Red Sea in winter, recent observations suggest it is rare or uncommon on the coast, Oct-Apr. The most recorded is 6 (all immatures) in Jan. Also up to 3 observed Jul-Aug (Phillips 1982; Brockie 1985; MIE, JK, RFP).

Pelecanus rufescens **Pink-backed Pelican**

195 recorded in most coastal areas visited, 13 Oct-29 Nov, between Al Khawkhah and Al Luhayyah. The largest numbers were 80 in mangroves at Al Luhayyah on 25 Oct and 36 at Al 'Urj on 26 Oct; some were adults in breeding plumage. Up to 7 at Hodeidah sewage lagoons in mid-Oct.

Widespread on the coast all year, the largest numbers occurring near mangroves. A large breeding colony was found north of Ibn 'Abbas in autumn 1985 (R. Ormond).

Botaurus stellaris **Bittern**

Two in *Typha* beds near Ta'izz on 31 Oct.

The only other records are of singles, also near Ta'izz, in winter 1984/5 and Oct 1985 (SF). This secretive species could be a regular winter visitor in small numbers.

Ixobrychus minutus **Little Bittern**

One was mist-netted in mangroves at Al 'Urj on 26 Oct.

The only other records are of 1 at Wadi al Walajah (Tihamah) on 5 Sep 1984, 2 at Hidhran on 8 Sep 1984 (MIE), 1 found injured in Sana'a in Oct/Nov 1985 (S. Fenwick) and 1 near Suq 'Abs on 18 Apr 1986 (Martins 1986). Because of its secretive nature, the paucity of records need not preclude this species being a regular autumn migrant in small numbers.

Nycticorax nycticorax **Night Heron**

7 recorded, 24 Oct-1 Dec, at four sites: Wadi Surdud (2), marshes near Ta'izz (4) and Ma'rib (1).

Only 2 other records: 1 at the head of Wadi Bana, 6-10 Oct 1979 (Phillips 1982); 4 at Yakhtul, Oct 1983 (JK).

Butorides striatus **Green-backed Heron**

Only recorded in mangroves at Al 'Urj, where 3 on 26 Oct.

A resident species occurring locally usually in or near areas of mangroves or date palms in small numbers. Recorded from Al Khawkhah, Al 'Urj, Hataban island, Hodeidah, Yakhtul, Nukhaylah and Ar Ru'ays.

Ardeola ralloides **Squacco Heron**

Single birds recorded near Bajil, Ta'izz and Al Khawkhah, 22 Oct-3 Nov.

A passage migrant in very small numbers in spring and autumn. Recorded wintering in 1984/5 and 1985/6 (MIE, SF). Also observed May-Jul (JK, DDP).

Bubulcus ibis **Cattle Egret**

2,370 recorded, with the majority on the Tihamah. Birds were also recorded in the Ta'izz region and 2 were at the new Ma'rib dam (interior desert) on 1-2 Dec. Often seen in large flocks at (or flying to) roost, with the largest numbers being 400 on plains below Jabal Bura' on 18 Oct, 150 near Al Kadan on 21 Oct and 350 at Ta'izz sewage lagoons on 31 Oct.

A widespread resident species on the Tihamah, local in the southern foothills and uplands (especially in the Ta'izz region) up to 1,400 metres, and apparently rare in the interior desert.

Egretta gularis **Western Reef Heron**

106 in coastal areas between Al Mukha and Al Luhayyah, with a maximum daily count of 15.

Apparently resident in coastal areas, with occasional records in wadis with running water up to 75 km inland (Cornwallis & Porter 1982; MIE).

Egretta garzetta **Little Egret**

104 recorded, 13 Oct-2 Dec, with highest numbers (20, 30) in Wadi Surdud near Khamis Bani Sa'd. Most recorded from the coast to the western ramparts up to c. 1,400 metres, but also 6 in the Ma'rib area (interior desert) on 1-2 Dec.

A passage migrant and winter visitor in small numbers; also occasional in summer (MIE).

Egretta alba **Great White Egret**

Not recorded during the Expedition.

Listed as occurring in winter 1962/3 (Montfort 1965), and since then observed only occasionally between Feb and Apr at Al Khawkhah, Al 'Urj and Ta'izz, usually singly but up to 8 at Ta'izz on 14 Apr 1985 (JK, RPM, DDP).

Ardea cinerea **Grey Heron**

65 recorded throughout the period of which 50 were on the coast/Tihamah, 12 in the foothills/ramparts, 2 on the highland plateau and 1 in the interior desert.

A passage migrant and winter visitor in small numbers with most recorded on the coast and Tihamah. Some may oversummer as birds are regularly observed in May-Jul (MIE, JF, JK).

Ardea purpurea **Purple Heron**

Seven recorded, 18 Oct-26 Nov: 5 were on the coast/Tihamah and 2 in the foothills/ ramparts.

An uncommon passage migrant and winter visitor observed 5 Sep-25 Apr, plus 1 on 3 Jun at Ta'izz (DDP).

Ardea melanocephala **Black-headed Heron**

Not recorded during the Expedition.

The only record is of 1 near Ta'izz on 12 Dec 1982 (JK). This African species has also been recorded in Oman (Gallagher & Woodcock 1980) and in South Yemen (S. J. L. Hill, J. Hulbert).

Ardea goliath **Goliath Heron**

One on the coast at Al Luhayyah on 26 Nov.

While Meinertzhagen (1954) states that it is not uncommon on the coast, recent observations show it to be scarce with no more than 3 together. Most regularly observed at Al Luhayyah where it very probably breeds in the mangroves.

Scopus umbretta **Hamerkop**

72 recorded, the majority in the Tihamah foothills and western ramparts at 250-1,830 metres. Also recorded at Sana'a (2,300 metres) and in the interior desert where 5 at Ma'rib dam on 1-2 Dec. Used nests seen in the western ramparts along wadis, and courtship display and copulation observed on 12 Nov.

A fairly widespread resident in the foothills and lower part of the western ramparts at lower altitudes but has been recorded up to 3,000 metres in autumn and up to 2,400 metres in May-Aug and winter (MIE, RFP). The limited data available suggest winter nesting.

Ciconia nigra **Black Stork**

29 recorded in the Tihamah foothills and western ramparts, 27 Oct-21 Nov, most passing south including a flock of 15 over Ta'izz on 31 Oct (see Porter & Christensen 1987).

A passage migrant in very small numbers in autumn, usually in the southern uplands. The only spring record is in Mar 1983 (JF).

Ciconia abdimii **Abdim's Stork**

Seven flew south over the Tihamah and foothills in Oct (see Porter & Christensen 1987).

A summer visitor breeding locally on the Tihamah and at Ta'izz. The earliest recorded is 14 Feb (NOSY) and most have departed by Oct, but one Dec record in 1984 (JF).

Ciconia ciconia **White Stork**

Up to 140 recorded at marshes near Ta'izz, 2-18 Nov; also 83 observed elsewhere, 24 Oct-28 Nov, the majority passing south in small groups over the Tihamah and foothills (see Porter & Christensen 1987).

A passage migrant and winter visitor in small numbers, but locally common near Ta'izz, where up to 270 observed in Feb (MIE, SF).

Plegadis falcinellus **Glossy Ibis**

Up to 143 present at Ta'izz marshes and sewage lagoons, 31 Oct-19 Nov. Elsewhere, seen only on the Tihamah: 234 at scattered localities, 16 Oct-23 Nov, 200 of which were on flooded fields near Jabal Bura' on 13 Nov.

A passage migrant and winter visitor in small numbers, though locally common (e.g. at Ta'izz marshes, where many oversummer).

Geronticus eremita **Bald Ibis**

A group of 14 (12 adults and 2 juveniles) in a marshy area near Ta'izz in Oct and Nov. The adults had been present throughout the summer and were joined by the juveniles in Aug (DDP).

Although Meinertzhagen (1954) thought there was probably an unlocated breeding colony in Yemen, and Hirsch (1977) suggested that the species may once have been resident there, there is no firm evidence to support these views. Until the appearance of the Ta'izz birds, the only definite records for North Yemen were of one near Al Kadan in Dec 1984 and 6 there in spring 1985 (JF, NOSY).

A single bird was seen at Ta'izz sewage lagoons on 14 Apr 1985 and there were 3 on 23 May and 8 on 22 Jun (DDP); the total of 14 (including 2 juveniles) was first recorded in autumn in 1985 (precise dates unknown) and subsequentlytes unknown) and subsequently by the Expedition as noted above. After the end of Nov 1985, sightings were intermittent and often of only 2-3 birds, but from 20 to 23 Jan 1986 9 were seen roosting with Cattle Egrets in a palm standing in open water, and the last sighting was of 11 on 14 Feb 1986 (NOSY). A search of all known sites on 12-13 Apr 1986 failed to locate any and while it is possible that the birds had moved elsewhere it seems more likely that they had left the area (Martins 1986). On 8 Jan 1987 at least 4 (possibly 8) were again seen at Ta'izz (MIE, M. Halliday).

It was speculated that breeding may have occurred in North Yemen in 1985, especially since 2 juveniles were present, but no firm evidence was obtained then or subsequently. It seems much more likely that the birds originated from the colony at Birecik in south-east Turkey and that the bird's status in North Yemen is that of a winter visitor, with the possibility of small numbers lingering through the summer. In summer 1985 a bird was seen to collect, sit on and arrange sticks before a second bird "took over" (DDP), but this behaviour seems unlikely to represent a true nesting attempt. The final sighting date of 14 Feb 1986 is perhaps significant, since the Birecik birds arrive back at the colony in Feb, and the apparent absence of birds in Apr 1986 lends support to the theory of winter visiting. Nevertheless, further detailed observations are necessary to clarify the situation.

Bald Ibis *Geronticus eremita* S. Christensen

Threskiornis aethiopicus **Sacred Ibis**

Not recorded during the Expedition.

Either a vagrant or very rare breeder. An adult pair at Nukhaylah from 10 Jan to 4 Feb 1982 (Brockie 1985), an adult there on 22 Oct 1982 (RFP, NJR), 2 adults there on 2 Jan 1984 (RFP) and 1 on 7 Mar 1986 (R. Self). An adult and immature at Ghulayfiqah on 11 Jan 1982 (Brockie 1985).

Platalea leucorodia **Spoonbill**

101 recorded, 13 Oct-27 Nov, 95 being at scattered localities on the coast and 6 on the Tihamah. Apart from 36 at Al Luhayyah on 25 Oct, numbers ranged from 1 to 14.

A passage migrant and winter visitor in small numbers, usually on the coast but 1 at Ta'izz in Jan 1985 (NOSY). In addition reported as breeding on islands off the North Yemen coast (between Hodeidah and Midi) and summering birds, including adults in breeding plumage, may have originated from them (MIE).

Phoenicopterus ruber **Greater Flamingo**

319 recorded, throughout the period, mostly on the coast. Apart from 55 which frequented Hodeidah sewage lagoons, flock size did not exceed 30. Away from the coast birds were occasionally observed on temporary pools on the Tihamah and 1 was at Ta'izz sewage lagoons on 31 Oct.

A passage migrant and winter visitor, but also recorded through the summer in smaller numbers (MIE). Occurs largely on the coast, and the largest flock is 100 at Hodeidah sewage lagoons in Oct 1984 (JF).

Tadorna ferruginea **Ruddy Shelduck**

One at Hodeidah sewage lagoons on 23 Nov.

Only 2 other records: 1 at Hodeidah sewage lagoons in Jun-Jul 1984 (MIE, JF); 8 there on 20-21 Mar 1986 (NOSY).

Tadorna tadorna **Shelduck**

Not recorded during the Expedition.

A rare winter visitor having been recorded on 4 occasions on the coast: 2 in Feb 1982 (Brockie 1985), 4 during 1982 (JF), 2 in Jan and Mar 1983 (JK).

Anas penelope **Wigeon**

223 recorded, 3 Oct-27 Nov, with an increase in numbers during Nov. The largest flocks were 60 on the Tihamah at pools near Jabal Bura' on 13 Nov, 43 on the coast at Al Fazzah on 23 Nov and 30 at Ta'izz sewage lagoons on 19 Nov.

A passage migrant and winter visitor to the coast and to Ta'izz sewage lagoons and marshes. Largest number 100 at Ta'izz sewage lagoons in Jan and Feb 1986 (MIE, SF). A male was at Hodeidah sewage lagoons in Jul 1984 (MIE, JF).

Anas strepera **Gadwall**

Not recorded during the Expedition.

A rare winter visitor recorded on 4 occasions on the coastal Tihamah: a pair at Wadi Zabid on 17 Jan, 2 pairs Al Fazzah on 19 Jan (Brockie 1985), 1 at Hodeidah sewage lagoons on 1 Jan and 4 there on 2 Jan 1984 (RFP).

Anas crecca **Teal**

The second commonest species of wildfowl, with 584 recorded, 16 Oct-27 Nov. There was a notable increase during Nov. At Ta'izz sewage lagoons numbers increased from 30 on 31 Oct to 300 on 19 Nov and at pools on the Tihamah near Jabal Bura' numbers increased from 22 on 13 Nov to 210 on 17 Nov. Otherwise, no more than 8 at any one site, all of the remainder being on the Tihamah or coast except for one at Ibb.

A passage migrant and winter visitor forming local concentrations, notably at Ta'izz where 400 recorded in Feb 1986 (MIE, SF).

Anas platyrhynchos **Mallard**

Not recorded during the Expedition.

Apparently an uncommon passage migrant and winter visitor with some years perhaps better than others. Not recorded until 12 Oct 1979 when 15 at Al Luhayyah (Phillips 1982); the only other records are 140 at Ta'izz sewage lagoons on 2 Dec 1982 and 1 at Al Khawkhah, Jan-Feb 1983 (JK).

Anas acuta **Pintail**

722 recorded during the period making it the commonest species of wildfowl. Numbers increased noticeably during Nov: e.g. at Ta'izz sewage lagoons 60 on 31 Oct had increased to 220 by 19 Nov. Apart from these and singles at Ibb and Ma'rib dam all others were on the coast or Tihamah where the largest flock was 130 near Jabal Bura' on 13 Nov.

A passage migrant and winter visitor, numbers peaking in Feb when 470 have been counted at Ta'izz sewage lagoons (MIE, SF).

Anas querquedula **Garganey**

144 recorded. The maximum was 50 at Ta'izz sewage lagoons on 31 Oct, which had decreased to 10 by 19 Nov. All others were on the coast or Tihamah where the largest flock was 30 at Hodeidah sewage lagoons on 23 Oct.

A passage migrant and winter visitor, usually in small numbers. Extreme dates 18 Aug-12 Apr.

Anas clypeata **Shoveler**

405 recorded, with a noticeable increase in numbers during Nov: e.g. 60 at Ta'izz sewage lagoons on 31 Oct had risen to 200 by 19 Nov. Elsewhere only recorded on the coast and Tihamah where the largest flock was 35 at Al Fazzah on 23 Nov.

A passage migrant and winter visitor, numbers peaking in Feb when 300 have been counted at Ta'izz sewage lagoons (MIE, SF).

Aythya ferina **Pochard**

A single bird at Ta'izz sewage lagoons on 31 Oct and 19 Nov and 2 at Ma'rib dam on 1-2 Dec.

A rare or uncommon winter visitor to newly created bodies of fresh water, first recorded in Jan-Feb 1984 when 3 at Hodeidah sewage lagoons (JF, RFP); 3 also seen there in Nov-Dec 1984 with 2 on 5 Apr 1985 (JF, J. Hollingworth). At Ta'izz sewage lagoons present in Jan-Mar 1985, with a pair remaining until 15 Jun; and 10 there on 9 Jan 1986 (MIE, SF, DDP)

Aythya nyroca **Ferruginous Duck**

Only recorded at Ta'izz sewage lagoons: 21 on 31 Oct, 72 on 19 Nov.

A local winter visitor in fairly small numbers. Regularly recorded at Ta'izz sewage lagoons since Dec 1982 (JK, NOSY) and 150 counted there in Feb 1986 (MIE, SF). Up to 6 at Hodeidah sewage lagoons in Jan 1984 (RFP) and pairs recorded at both these localities in Jun.

Aythya fuligula **Tufted Duck**

77 at six scattered localities, 31 Oct-2 Dec, with highest counts of 17 at Ta'izz sewage lagoons on 19 Nov and 45 at Hodeidah sewage lagoons on 23 Nov.

A fairly uncommon winter visitor with only c. 4 previous records, one a flock of 50 at Ta'izz in Feb 1986 (MIE, SF).

Pernis apivorus **Honey Buzzard**

Ten recorded (all juveniles), 15 Oct-18 Nov, including 3 passing south over the Tihamah or foothills (see Porter & Christensen 1987).

An uncommon passage migrant, most being observed over the Tihamah foothills or southern uplands. Only recorded in autumn, 16 Sep-9 Dec, with up to 5 in a day (18 Sep) (Phillips 1982; MIE, JK, RFP, NJR).

Elanus caeruleus **Black-shouldered Kite**

Only recorded in Wadi Surdud, 24-27 Oct: 2 near Al Kadan and 4 (2 pairs) at Gerabi, where threat display against Spotted Eagle and Marsh Harrier was repeatedly observed. All birds were associated with *Dobera glabra*, one of the typical trees of the eastern Tihamah.

A very local resident. Regularly recorded in Wadi Surdud and also near Dhamar (Feb), Ta'izz (Mar), Ibb (May), Qa' al Haql near Wadi 'Ashshar (2 pairs, Jul), Al Midman (Sep) and near 'Amran. Usually associated with plains with large trees (*Dobera* or *Acacia*) from 180 to 2,400 metres.

Milvus migrans **Black Kite**

Much the commonest raptor with 4,798 recorded and showing a fairly even distribution throughout all regions and altitudes. 82 were recorded migrating south between 27 Oct and 4 Nov (see Porter & Christensen 1987). Of the two races present, data for 6 Nov-3 Dec suggest that *aegyptius* (yellow-billed) was slightly commoner, with a preference for towns and villages in dry areas. *M. m. migrans* seemed to prefer wetter areas.

The race *aegyptius* is a common breeding resident up to 2,600 metres. *M. m. migrans* is a common passage migrant (especially Mar-Apr and Sep-Oct) and a winter visitor in smaller numbers.

Gypaetus barbatus **Lammergeier**

Two adults and 4 immatures seen at five sites in the highlands and western ramparts (1,850-3,600 metres): south of Sana'a, Al Mahwit, At Tawilah, Kawkaban and Jabal an Nabi Shu'ayb.

A thinly distributed resident recorded in at least twelve localities in the highlands (especially the plateau and high ramparts west of Sana'a) above 850 metres, but mostly above 2,000 metres.

Neophron percnopterus **Egyptian Vulture**

154 recorded in all regions except the highland plateau. 81 were observed flying south on passage over the foothills and adjacent Tihamah in late Oct and Nov (see Porter & Christensen 1987).

A passage migrant and winter visitor in small numbers, and scattered summer records (including pairs) from the Tihamah, western ramparts, highlands and interior desert suggest widespread breeding. Formerly much commoner: films and photos of Sana'a and Ta'izz in 1930s and 1950s show large groups at slaughtering sites.

Gyps fulvus **Griffon Vulture**

The commonest vulture with 570 recorded in the foothills (and adjacent Tihamah), western ramparts and highlands. Largest concentrations were 42 (Jabal Bura'), 30 (Sumarah pass), 45 (Kawkaban) and 37 (Al Mahwit). Twelve flying south in the Tihamah foothills, 27 Oct-4 Nov, may have been genuine migrants or local birds temporarily caught up with movements of other raptors.

A widespread and fairly common breeder, mostly in the highlands, ramparts and foothills. The possibility of some migration requires firmer evidence.

Gyps rueppellii **Rüppell's Vulture**

Not recorded during the Expedition.

The only records are singles on the Tihamah in winter 1975/6 (JSA) and May or Jun 1982 (A. Helbig). No details to substantiate these observations have been seen.

Torgos tracheliotus **Lappet-faced Vulture**

Not recorded during the Expedition.

The only records are of singles at El Behr and Jiblah in Dec 1974 (Thiollay & Duhautois 1976), but no descriptions have been seen. One possible (or Black Vulture) was however seen at the Sumarah pass on 16 Sep 1983 (MIE).

Aegypius monachus **Black Vulture**

Not recorded during the Expedition.

The only records are in 1912/13 (Sclater 1917); and singles near Jiblah on 28 Dec 1974 (Thiollay & Duhautois 1976) and near Dhamar on 28 Sep 1979 (Phillips 1982). No details to substantiate these observations have been seen.

Circaetus gallicus **Short-toed Eagle**

65 recorded, mostly in the Tihamah, foothills and western ramparts; of these, 38 flew south over the foothills in late Oct and early Nov (see Porter & Christensen 1987).

A passage migrant and winter visitor in small numbers. Extreme dates 15 Aug-20 Mar.

Terathopius ecaudatus **Bateleur**

Five (3 adults, 1 sub-adult, 1 immature) at four sites on the Tihamah close to the foothills; particularly favoured areas with scattered large trees, notably *Dobera glabra*.

A scarce resident of the inner Tihamah and adjacent foothills, though it has been recorded up to 2,000 metres.

Circus aeruginosus **Marsh Harrier**

51 recorded, throughout the period. All were on the Tihamah except for up to 5 (the largest number in a day) at marshes near Ta'izz.

A passage migrant (from 17 Aug) and winter visitor in small numbers, usually at low altitudes but occasionally in the highlands.

Circus cyaneus **Hen Harrier**

Not recorded during the Expedition.

The only records are of 1 at Kitab on 9 Apr 1980 (MASB, SCM), a female at Zabid on 16 Jan, a male at Al Manarah on 25 Jan 1982 (Brockie 1985) and 1 at Ta'izz on 18 Jan 1985 (DDP).

Circus macrourus **Pallid Harrier**

16 recorded, 14 Oct-17 Nov, all on the Tihamah; most were juveniles. See also Montagu's Harrier.

Apparently an autumn passage migrant (from 19 Sep) in small numbers, with only occasional winter and spring records up to 5 Apr (J. Hollingworth).

Circus pygargus **Montagu's Harrier**

38 recorded, 14 Oct-28 Nov, nearly all on the Tihamah, with up to 7 in a day (28 Nov at Al Qutay'). In addition 6 ring-tail harriers were observed, all considered to be Pallid or Montagu's.

An autumn passage migrant in small numbers with a few wintering (e.g. Brockie 1985). Commoner than Pallid Harrier but these abundances are apparently reversed in Saudi Arabia (Jennings 1981). One spring record of a male at Ta'izz on 24 Feb 1983 (JK).

Melierax metabates **Dark Chanting Goshawk**

68 recorded on the Tihamah and 5 in the At Turbah-Ta'izz-Ibb region up to 1,900 metres. The ratio of birds aged was 3 adults : 1 juvenile.

A resident bird of the Tihamah and (locally) the southern highlands up to c. 1,900 metres.

Micronisus gabar **Gabar Goshawk**

Three recorded, all on the Tihamah: near Az Zaydiyah on 19 Oct, near Hays on 21 Nov and near Suq 'Abs on 25 Nov, all areas of *Acacia* thicket.

Status uncertain but probably a rare resident. Few other records: an immature in Wadi Zabid, Apr 1979; a male (and possibly a female) at Rada' in the eastern flanks Nov 1979; a pair near Ad Durayhimi, Jan 1982; 1 at Bajil, Dec 1982; 1 near Ta'izz, Jul 1984 (Cornwallis & Porter 1982; Phillips 1982; Brockie 1985; JK).

Accipiter nisus **Sparrowhawk**

34 recorded, 32 of which were in Nov; 5 were flying south (see Porter & Christensen 1987). The majority were in the highlands but birds were also recorded from the Tihamah and interior desert.

A winter visitor (MIE, RFP) and passage migrant in small numbers. Earliest arrival date 18 Sep (MIE) and the last birds depart in April (Cornwallis & Porter 1982). Most birds seem to be females.

Accipiter badius **Shikra**

Recorded in three areas, all in the Tihamah foothills or western ramparts up to c. 1,500 metres: at Jabal Bura' up to 5 observed, and aerial display and courtship noted in Nov; 2 in foothills near Al Kadan; 2 in different locations near Al Mahwit.

Now identified on c. 10 occasions in North Yemen (Mar-Jun, Nov-Dec) all in well-wooded regions from foothills to highlands. Pairs have been recorded in summer at Jabal Bura' and a recently fledged juvenile was seen there in early Jun 1986 (MIE).

Accipiter brevipes **Levant Sparrowhawk**

Four recorded on the Tihamah and adjacent foothills, 14-28 Oct.

Only 2 other records: several in late Oct 1979 (Phillips 1982); 1 at Mar'ib on 4 Jan 1975 (Thiollay & Duhautois 1976). Thus a scarce autumn passage migrant, and might rarely overwinter.

Buteo buteo **Buzzard**

862 recorded, 14 Oct-3 Dec, of which 703 were on southerly passage over or near the Tihamah foothills (see Porter & Christensen 1987). All birds seen well were *B. b. vulpinus*, the fox-red and grey-brown types being commonest with blackish-brown birds scarce.

A passage migrant which is apparently much commoner in autumn than spring; also a winter visitor in small numbers (e.g. Cornwallis & Porter 1982, Phillips 1982). It seems likely that North Yemen is an important flyway for this species in autumn and this would repay further study. Extreme dates 31 Aug-15 Apr.

Buteo rufinus **Long-legged Buzzard**

25 recorded, mostly single birds at widely scattered localities in the highlands, western ramparts, foothills and Tihamah. Two, apparently on migration, flew south with other raptors on 4 and 18 Nov. Except for one blackish-brown bird all were in normal plumage.

Status uncertain. It is clearly a passage migrant and winter visitor in small numbers but almost certainly breeds in the highlands (and in the interior desert) where frequently seen May-Aug, sometimes in pairs and with blackish-brown birds quite common (MIE).

Aquila pomarina **Lesser Spotted Eagle**

Not recorded during the Expedition.

Only claimed twice: in Jan 1975 (Thiollay & Duhautois 1976) and Nov 1979 (Phillips 1982), though no descriptions have been seen to substantiate these observations.

Aquila clanga **Spotted Eagle**

42 recorded, 18 Oct-27 Nov, the majority in Nov; of these, 10 were passing south along the Tihamah/foothills (see Porter & Christensen 1987). No adults were seen and of all birds aged the majority were 1st or 2nd year. Often occurred close to areas of fresh water.

While previously recorded only occasionally in North Yemen (Porter & Cornwallis 1982) or strongly suspected on passage in autumn (Phillips 1982), the Expedition's observations clearly show it to be a passage migrant in small numbers; it is possible that it is far commoner in autumn than spring. Also recorded in winter at Ta'izz in Jan-Feb 1986 (MIE, SF).

Aquila rapax **Tawny Eagle**

16 recorded, all in the Tihamah foothills and southern highlands (Ibb-Ta'izz) below 1,700 metres.

Although breeding has been proved only once (Brockie 1985), it seems likely that this is an uncommon resident in the Tihamah foothills and southern uplands, forming concentrations where food is abundant, e.g. at Ta'izz rubbish tip where up to 106 immatures have been recorded in Jul (MIE).

Aquila nipalensis **Steppe Eagle**

The second commonest raptor with 2,716 between 27 Oct and 3 Dec. Of these 2,499 were migrating south over the foothills or adjacent Tihamah (see Porter & Christensen 1987).

These and other observations (Phillips 1982; MIE, RFP, NJR) show this to be the commonest raptor on migration in autumn and locally common in winter at certain highland sites.

Aquila heliaca **Imperial Eagle**

20 juveniles or immatures and 7 adults were recorded, 4-28 Nov; nearly all were over the Tihamah foothills or southern uplands. Of these, 13 were on direct southerly passage (see Porter & Christensen 1987).

A passage migrant in small numbers in both spring and (especially) autumn with adults moving later in autumn and earlier in spring than younger birds, e.g. northerly passage of adults noted in the highlands in Jan-Feb (NOSY). A localised winter visitor with a particular concentration at Ta'izz rubbish tip (Cornwallis & Porter 1982).

Aquila chrysaetos **Golden Eagle**

Two at Jabal Bura' on 18 Oct was the only record.

Probably an uncommon breeding resident, having been recorded at 9-10 localities in the western ramparts and highlands in Mar-Jun, Aug, Oct and Dec (displaying Mar-Apr).

Aquila verreauxii **Verreaux's Eagle**

Three pairs and an immature recorded at four sites in the Tihamah foothills and one in the highlands (at c. 3,000 metres). Display and copulation observed on 12 Nov.

An uncommon resident, though apparently quite widely scattered and now recorded at five sites in the Tihamah foothills and 5-6 in the highlands.

Hieraaetus pennatus **Booted Eagle**

28 recorded, 18 Oct-26 Nov, including 7 migrating south along the Tihamah foothills (see Porter & Christensen 1987).

A passage migrant and winter visitor in very small numbers (Cornwallis & Porter 1982). The limited data suggest main months of migration to be Mar and Oct. Extreme dates 27 Sep-17 Apr.

Hieraaetus fasciatus **Bonelli's Eagle**

23 recorded at ten sites (three in the Tihamah foothills, five in the western ramparts, one on the highland plateau and one on the eastern flanks). 14 were adults (pairs) and 9 immatures, the latter being recorded at the lower altitudes. Sky-dance display noted in Nov.

Resident in the highlands in small numbers, with some evidence to suggest movement of young birds to lower altitudes in autumn (Cornwallis & Porter 1982).

Pandion haliaetus **Osprey**

24 recorded, throughout the period, all at coastal localities with the exception of 1 at Ta'izz sewage lagoons in the southern uplands on 19 Nov (suggesting passage).

A fairly common breeding resident on the coast, and also probably a passage migrant and winter visitor.

Falco naumanni **Lesser Kestrel**

Only seen on the Tihamah where a feeding flock of 110 was recorded near Al Kadan on 21-24 Oct. 13 other sightings were made up to 4 Nov.

A passage migrant in small numbers, mostly at lower altitudes, seemingly more common in autumn (Oct-Nov) than spring (Cornwallis & Porter 1982; Phillips 1982). Extreme dates 25 Sep-27 Apr.

Falco tinnunculus **Kestrel**

129 recorded, from sea-level to 3,400 metres. Display noted on 17 Nov.

A resident at all altitudes; also a winter visitor and passage migrant.

Falco columbarius **Merlin**

Not recorded during the Expedition.

The only record is 1 at Hodeidah sewage lagoons on 2 Jan 1984 (RFP). Merlin is rare anywhere in Arabia, and this record seems to be the most southerly ever in western Eurasia or Africa.

Falco subbuteo **Hobby**

23 recorded, 22 Oct-28 Nov. Most were over the Tihamah and foothills, but also a few in the southern uplands. The maximum was 6 over pools near Jabal Bura' on 27 Nov.

An uncommon passage migrant only recorded in autumn from 30 Aug to Nov.

Falco concolor **Sooty Falcon**

Not recorded during the Expedition.

Only 2 positive records: a pair and an immature at Kitamah island in Oct 1979 (Phillips 1982); 1 at Al Mukha in late May or early Jun 1982 (A. Helbig).

Falco biarmicus **Lanner**

11 recorded, 17 Oct-2 Dec: 4 on the Tihamah, 6 in the southern uplands and 1 in the interior desert. All adults identified to subspecies were *tanypterus*, an apparently sedentary race whose nearest breeding area is northern Sudan; thus its presence might indicate a hitherto unknown extension of breeding range.

The status of Lanner in North Yemen requires further study. It has been recorded in winter (rarely), spring and (commonly) autumn (e.g. Cornwallis & Porter 1982, Phillips 1982). In spring, birds of the races *tanypterus* and *abyssinicus* (from the Afrotropics) have been observed but it is unlikely that both would breed. It would seem to be a passage migrant and winter visitor in small numbers but also an uncommon breeding resident, with juveniles in a family party having been seen in Jun (MIE).

Falco cherrug **Saker**

Five recorded (possibly only 3 individuals), 25 Oct-18 Nov: 1 on the coast and 4 in the Ta'izz-Mafraq al Mukha area of the southern uplands.

Previously recorded on 6 occasions in Mar, Sep and Dec (Thiollay & Duhautois 1976; Cornwallis & Porter 1982; MIE, JK). Apparently a rare or uncommon passage migrant and winter visitor, especially to the southern uplands.

Falco peregrinus **Peregrine**

Seven recorded (probably only 4-5 individuals), 13 Oct-23 Nov. All were at the coast and the races *F. p. peregrinus* and *F. p. calidus* were identified.

Apparently an uncommon passage migrant and winter visitor occurring especially on the coast (Cornwallis & Porter 1982; Phillips 1982; Brockie 1985; MIE, NOSY).

Falco pelegrinoides **Barbary Falcon**

Much the commonest large falcon, with 35 recorded including at least 7 pairs and an adult with a juvenile (11 Oct). Most were in the Tihamah foothills east to the highland plateau and thus generally in more mountainous, spectacular country than Lanner.

A widespread resident from highlands (3,000 metres) to coast, coastal records probably referring to post-breeding dispersal or wandering.

Alectoris philbyi **Philby's Rock Partridge**

Recorded at only 2 sites, both being almost bare hillsides with boulder scree: 5 adults and 4 juveniles at 2,500 metres between Sana'a and Shibam, 11 Oct (also, 5 *Alectoris* sp. were recorded at this site on 6 Nov); 2, heard only, at 3,600 metres on Jabal an Nabi Shu'ayb, 29 Nov. For details of this species, see Rands (1987).

A scarce resident above 2,300 metres in the highlands.

Alectoris melanocephala **Arabian Red-legged Partridge**

71 recorded, at altitudes of 250-2,800 metres in the foothills and highlands, mostly on lightly vegetated, sloping, stony or rocky ground. For details of this species, see Rands and Rands (1987).

A widespread but rather uncommon resident.

Ammoperdix heyi **Sand Partridge**

48 recorded in the Ma'rib area (up to 23 birds per day) and at 1,700 metres between Sa'dah and Raydah (3 birds).

A rather uncommon resident, apparently restricted to the eastern flanks and rocky outcrops further east. As Sand Partridge is a bird of rocky ground, it is surprising that Brockie (1985) noted 2 records in Jan from (presumably) atypical habitat at Al Mansuriyah and Hodeidah on the Tihamah.

Coturnix coturnix **Quail**

Ten recorded, 18 Oct-28 Nov. Mostly single birds and all but one on the Tihamah.

A scarce passage migrant and winter visitor, Oct-Apr (Cornwallis & Porter 1982; Phillips 1982; JSA, JK, RFP, NJR). Also, Meinertzhagen (1954) mentions adults with chicks seen in Jun in North Yemen or south-west Saudi Arabia (central Palaearctic birds are not known to breed regularly south of Iraq and the Levant, but the species is also a nomadic or resident breeder as close as Ethiopia: Cramp & Simmons 1980; Urban *et al.* 1986). Unfortunately it is often not clear whether North Yemen records have been satisfactorily separated from Harlequin Quail, so the breeding record must be regarded as unproven.

Coturnix delegorguei **Harlequin Quail**

Ten recorded (seen and/or heard): 7 singing in a small area of sorghum up to 1.5 metres tall south-west of Jabal Bura', 18 Oct; 2 at the Gerabi farm, 27 Oct; 1 at 1,850 metres near Al Mahwit, 10 Nov. Song loud and variable: e.g. *"whit whit whit whit-whit"*, first three notes rising, last two lower.

This secretive, essentially African bird may be present in many of the lusher cultivated areas in lowland south-west Arabia though there are no previous records from North Yemen and few from the surrounding region: specimens were obtained last century near Aden, where it was said at the time to be common (Meinertzhagen 1954), and since then it has been found to be present in small numbers in south-west Saudi Arabia (King 1978; Stagg 1984) and has

occurred once (in Jun) in Oman (Gallagher 1986). Since it is nomadic or migratory in Africa, residency (or even breeding) cannot be assumed, though it is present all year in Saudi Arabia (Stagg 1984).

Numida meleagris **Helmeted Guineafowl**

Ten recorded, all on the Tihamah towards the foothills: 2 near Jabal Bura' and (on 18 Oct) 2 adults and 4 chicks in Wadi Siham near Al Qutay'.

A resident breeder: mainly in scrubby areas of the foothills and adjacent eastern Tihamah, though also recorded near Ta'izz at 1,000 metres (NOSY). Generally scarce, though Brockie (1985) found it common around 15°51'N 43°13'E, Jabal Bura' and Jabal al Jama', with a roost of at least 50 near As Sukhnah on 5 Feb. This species shows considerable geographical variation, so the fact that the Arabian birds are said to be identical to the nominate race of north-east Africa perhaps indicates that the population was introduced (Meinertzhagen 1954).

Turnix sylvatica **Little Button Quail**

Not recorded during the Expedition.

One in *Suaeda* scrub near Hodeidah sewage lagoons on 10 Jan 1984 (RFP) is the only North Yemen record. Said to have been not uncommon in winter near Aden (Barnes 1893; Yerbury 1896), and one was collected there in Jan 1891 (Meinertzhagen 1954). Otherwise the only records from Arabia are of a female in south-west Saudi Arabia on 14 Apr 1976 (King 1978) and 1 in western Oman in Mar 1984 (Gallagher 1986).

Rallus aquaticus **Water Rail**

Two in a large *Typha* bed near Ta'izz sewage lagoons on 31 Oct.

Presumably a scarce winter visitor or passage migrant. Phillips (1982) recorded it daily 3-10 Oct 1979 on Qa' al Haql in the highlands, and there were 3 at Hidhran on 27 Oct 1982 (RFP, NJR) and 1 near Ta'izz on 12-13 Apr 1986 (RPM). These records, and 2 seen near Aden (Yerbury 1896), are apparently the most southerly records ever of west Eurasian birds and well south of regular wintering areas in North Africa and Arabia shown by Cramp and Simmons (1980).

Porzana porzana **Spotted Crake**

Not recorded during the Expedition.

Only 2 records: 1 on Qa' al Haql in the highlands on 8 Oct 1979 (Phillips 1982); 1 near Ta'izz on 12 Apr 1986 (RPM).

Porzana parva **Little Crake**

Two females or immatures in a large *Typha* bed near Ta'izz sewage lagoons, 31 Oct.

Presumably a scarce winter visitor or passage migrant. Other records are all at Hidhran or Ta'izz marsh: 1 on 24 Oct and 2 on 27 Oct 1982 (RFP, NJR); a female or immature on 28 Sep 1984 (MIE); a male on 13 Apr 1986 (RPM).

Porzana pusilla **Baillon's Crake**

Not recorded during the Expedition.

One record: 1 at Hidhran, 27 Oct 1982 (RFP, NJR).

Crex crex **Corncrake**

Not recorded during the Expedition.

One record: 3 in Wadi Maytam near Ibb, 18 Sep 1983 (MIE).

Gallinula chloropus **Moorhen**

167 recorded, only around Ta'izz: at the sewage lagoons and the nearby marsh (up to 60 at each), and at Hidhran (1 bird).

A very local resident breeder, presumably also a winter visitor. Occurs primarily around

Ta'izz, where present all year, with c. 100 at the sewage lagoons all through the period Nov 1984-Jun 1985 and 408 in that area on 14 Feb 1986; at least 1 brood seen in Jun 1985 (DDP), full-grown juveniles in Sep 1984 (MIE) and recently hatched young on 31 Oct 1985 (Expedition data). Records at other sites are of up to 4 (including 1 immature) at Al Fazzah on the coast, 30 Oct-3 Nov 1979 (Phillips 1982), 2 near Al Kadan on the Tihamah, 20 Oct 1982 (RFP, NJR), and c. 10 near Wadi Warazan on 8 Feb 1985 (DDP).

Fulica atra **Coot**

116 recorded: 27 at Ta'izz sewage lagoons on 31 Oct and 76 on 19 Nov; 10 at Hodeidah sewage lagoons, 23 Nov; 3 on shallow pools east of Al Qutay', 27 Nov.

Probably a winter visitor in small numbers to the few suitable areas, and present all year in the area of Ta'izz sewage lagoons: e.g. 334 on 14 Feb 1986 (MIE), 20 on 27 Jul 1984 (JK) and c. 40 through the period Nov 1984-Jun 1985; 1 pair bred May-Jun 1985 (DDP) and recently hatched young were seen on 31 Oct 1985 (Expedition data), this being only the second proved breeding site in the Arabian peninsula away from the Arabian Gulf and a considerable extension of the known breeding range (has bred also in western Oman: Gallagher 1986). At other sites: c. 6 near Suq 'Abs, 23 Nov (Phillips 1982); at Hodeidah sewage lagoons, 3 in Dec 1984 (JF), up to 15 on 1-10 Jan 1984 (RFP) and present there on 21 Mar 1986 (NOSY). North Yemen is at the extreme southern limit of the wintering range of west Palaearctic birds.

Rallidae **Rail sp.**

A small, black, moorhen-like bird with a conspicuous bright red bill seen by Phillips (1982) on Qa' al Haql, 8 Oct 1979, was not identified by the observer but his description is highly likely to refer to Allen's Gallinule *Porphyrula alleni* (see photograph of one in Sinclair 1984), an African species which is largely migratory and breeds as close as north-east Ethiopia. This would pre-date the only definite records for Arabia: a few birds at one site in western Oman, Jul-Sep 1984-6 (Gallagher 1986).

Grus grus **Crane**

Not recorded during the Expedition.

Three records: 30 at Wadi Mawr, autumn 1984 (NOSY); 8 at pools east of Al Qutay', 28 Nov 1985 (SF); 4 at Ta'izz sewage lagoons, 14 Dec 1985 (SF).

Anthropoides virgo **Demoiselle Crane**

A 1st-year at Ta'izz sewage lagoons on 19-22 Nov and an adult by the coast at Al Fazzah on 22-23 Nov.

Only 2 other records, both at Ta'izz sewage lagoons: 8 from 19 Oct to late Dec 1984 (SF); 1-2 adults, late Nov and early Dec 1985 (SF).

Ardeotis arabs **Arabian Bustard**

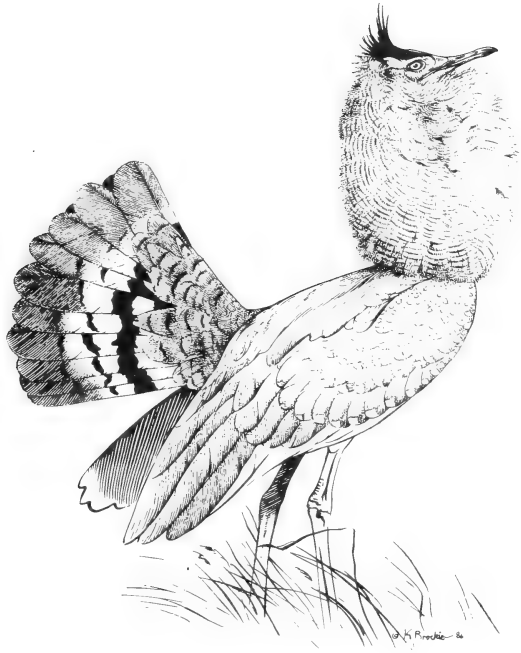
At least 17 individuals at three sites on the Tihamah. For security reasons, locations are not given, but all were cultivated areas where rain had fallen recently: cereals of various heights (mostly short) were predominant, fields being separated by low earth banks. Six displaying males were present at one site. For details, see Rands and Rands (*in prep.*).

A local and scarce resident on the Tihamah.

Hydrophasianus chirurgus **Pheasant-tailed Jacana**

A non-breeding adult or 1st-winter bird at pools east of Al Qutay', 27 Nov.

A regular winter visitor in small numbers to Oman (Gallagher & Woodcock 1980), and one obtained in South Yemen on 2 Dec 1950 (Guichard & Goodwin 1952), but there are no records from elsewhere in Arabia of this Indian and south-east Asian species, and the North Yemen bird is the furthest west ever.



Arabian Bustard *Ardeotis arabs* K. Brockie '86

Haematopus ostralegus **Oystercatcher**

27 recorded (perhaps only 22 individuals), scattered along the coast, 25 Oct-23 Nov.

A rather scarce non-breeding visitor to the coast, recorded throughout the year (MIE, JF).

Himantopus himantopus **Black-winged Stilt**

The second commonest wader inland, with 430 recorded, all at freshwater pools – mostly on the Tihamah (maximum 100 at Hodeidah sewage lagoons) but also at Ta'izz (maximum 140) and at Ma'rib dam in the interior. Recorded 13 Oct-2 Dec, with numbers at the main sites (the sewage lagoons of Hodeidah and Ta'izz) over twice as high in mid-Nov as in Oct.

A winter visitor (and probably passage migrant) in good numbers to the few suitable areas, and present all year (with breeding recorded) at some. About 60 were at Ta'izz sewage lagoons throughout the 1984/85 winter, most departing in early Apr but still c. 20 in late Jun 1985 (DDP); 112 in that area on 14 Feb 1986 (MIE) and 40 on 12-13 Apr 1986 (RPM). Up to 50 at Hodeidah sewage lagoons on 1-10 Jan 1984 (RFP), 30 on 5 Apr 1985 (J. Hollingworth) and 48 on 14 Jul 1984 (MIE); 1 pair bred in summer 1985 (NOSY).

Recurvirostra avosetta **Avocet**

187 recorded, 13 Oct-27 Nov, mostly at the sewage lagoons of Hodeidah (up to 40) and Ta'izz (up to 33), but also at pools east of Al Qutay' and locally on the coast (Al Luhayyah, Al Fazzah).

A local winter visitor (and probably passage migrant) in moderate numbers. Al Luhayyah, Al Fazzah and other areas at wadi mouths seem to be the favoured coastal sites, with counts of up to 19 in winter (Brockie 1985); not yet recorded in May and only 2 coastal Jun-Jul records (MIE, DDP, JF). At Ta'izz sewage lagoons, 20-30 present through the 1984/85 winter, leaving mid-Mar (DDP); however, 13 seen there on 12-13 Apr 1986 (Martins 1986), and recorded in autumn from 27 Jul (JK).

Dromas ardeola **Crab Plover**

Restricted to coastal mud- and sandflats. 192 recorded, including many dependent juveniles, 15 Oct-26 Nov, between Al Mukha and Al Luhayyah. Maximum of 78 in one bay at Ar Ru'ays.

A local winter visitor and probably a passage migrant. Up to 38 per site recorded in winter (Brockie 1985), and the highest count is of 166 at Al 'Urj on 14 Apr (MIE). Birds have been recorded in all months except May (when there has been very little coverage) and, though there is no proof of breeding, much display and occasional copulation have been seen in Apr at Al 'Urj, with at least 48 adults present there on 10 Jun 1986 (MIE). The earliest juveniles recorded are on 20 Aug (MIE).

Burhinus oedicnemus **Stone Curlew**

Ten recorded, 14 Oct-7 Nov, all on the Tihamah except for 1 near Sana'a. Seen only during the day-time and at least 5 of those recorded appeared to be roosting then (1600-1700 hrs), sheltering beneath small *Acacia* bushes. In addition, 1 unidentified *Burhinus* on 14 Oct.

Scarce; presumably a winter visitor and/or passage migrant. Listed, without details, by Meinertzhagen (1954) and Montfort (1965), but few other records: in the central Tihamah (e.g. Wadi Siham), 1-3 birds on 11 Feb 1982, 19 Sep 1983, and 20 and 22 Oct 1982 (Brockie 1985; MIE, RFP, NJR); in the lower highlands, 4 on 31 Dec 1984, 6 on 27 Jan 1985, 1 on 6 Sep 1984 and 1 on 27 Sep 1984 (MIE, DDP).

Burhinus capensis **Spotted Thick-knee**

Four recorded: 1 (active) after dark on 18 Oct in a cultivated area of Wadi Siham, east of Al Qutay'; 3 roosting together under shrubs at midday on 26 Nov, 23 km. north of Suq 'Abs.

Perhaps a resident breeder but the only other records are these: 1 at Ta'izz, 23 Dec 1948 (R. Meinertzhagen); 1, 14 km. east of Ta'izz on 6 Feb 1985, and 2 there on 1 May 1985 (DDP); 2 in Wadi Surdud, Nov 1984 (R. Self); 2 calling and chasing in Wadi Rima, 1 km. east of the coast road, 16 Apr 1986 (Martins 1986). Single *Burhinus* sp. calling at night at Al Khawbah and As Sukhnah in Feb (Brockie 1985) and in Wadi Adina in Aug (MIE), and 1 seen at Ta'izz sewage lagoons in Feb (DDP), are as likely to have been Stone Curlew as this species.

Cursorius cursor **Cream-coloured Courser**

Not recorded during the Expedition.

A rather rare winter visitor, perhaps also a passage migrant. First recorded by Montfort (1965) without details, and other records as follows: 6 near Ma'rib, 7 Jan 1984 (RFP); 2 at Sana'a airport, 5 Mar 1982 (Cornwallis & Porter 1982); 2 on the eastern flanks, 6 Sep 1983; 3 on the Tihamah, 18 Sep 1983 (MIE); 5 west of Dhamar in the highlands, 10 Oct 1979 (Phillips 1982); 2 in the northern highlands, Oct 1985 (NOSY); a small flock north of 'Amran in the highlands through the winter of 1984/5 (P. Bisset).

Glareola pratincola **Collared Pratincole**

Not recorded during the Expedition.

Rare, and perhaps a passage migrant only. The 6 records (of 9 birds) span 13 Sep-21 Oct and are from both the Tihamah and highlands (Sclater 1917; Phillips 1982; MIE, JK, RFP, NJR); also listed, without details, by Montfort (1965).

Charadrius dubius **Little Ringed Plover**

32 recorded, 13 Oct–2 Dec: 2 singles on the mudflats south of Hodeidah, but all others at fresh water on the Tihamah, near Ta'izz, or at Ma'rib. Maximum 14 at Ta'izz sewage lagoons on 19 Nov.

Uncommon passage migrant and winter visitor. Highest winter count of 8, at Ta'izz sewage lagoons (MIE). Extreme dates 17 Aug-15 Apr.

Charadrius hiaticula **Ringed Plover**

443 recorded, 13 Oct-28 Nov, though 300 of these were at one site (the spit north of Hodeidah, 21 Oct). Seen only on the coast except for 10 at Hodeidah sewage lagoons, 3 at pools east of Al Qutay' and 6 at Ta'izz sewage lagoons.

A winter visitor and passage migrant, usually in rather small numbers, mostly on the coast. One on 10 Jun is the only record between 25 Apr and 17 Aug (MIE, JK, DDP). Highest winter count 32 at Al Fazzah on 19 Jan (Brockie 1985).

Charadrius alexandrinus **Kentish Plover**

By far the commonest coastal wader, with 1,420 recorded, 13 Oct-27 Nov. Only 6 records away from the coast: 2 at Hodeidah sewage lagoons, 1 in Wadi Rima south of Al Mansuriyah and 3 at Ta'izz sewage lagoons.

A common winter visitor and passage migrant, with a highest count of 80 at Nukhaylah on 4 Feb (Brockie 1985; RFP); 1 inland at Ta'izz sewage lagoons on 24 Jan (NOSY). Apparently also breeds, with birds paired and in song-flight in Apr and performing distraction-display in Jul (MIE).

Charadrius mongolus **Lesser Sand Plover**

458 recorded, 13 Oct-26 Nov. Only 2 seen away from the coast – at Hodeidah sewage lagoons.

A common winter visitor and autumn passage migrant to the coast (perhaps less abundant in spring than autumn) and also apparently present, though in smaller numbers, through the summer (not yet recorded in May) (MIE, JK). Phillips (1982) counted over 1,000 on 8 km. of shore near Al Luhayyah, 12-23 Oct. Highest winter count 120 on 4 Feb (Brockie 1985). The only additional inland record is of 1 at Ta'izz sewage lagoons on 28 Sep (MIE).

Charadrius leschenaultii **Greater Sand Plover**

Much less common than Lesser Sand Plover, with 47 recorded, 15 Oct-26 Nov, all on the coast.

A not-uncommon winter visitor and passage migrant on the coast and also apparently present, though in smaller numbers, through the summer (not yet recorded in May) (Cornwallis & Porter 1982; MASB, MIE, SCM). Highest winter count 50 on 10 Jan (Brockie 1985).

Charadrius asiaticus **Caspian Plover**

Not recorded during the Expedition.

Two records: 1 at Al Fazzah, 1 Nov 1979 (Phillips 1982); 11 at As Suwayq, 19 Jan 1982 (Brockie 1985).

Pluvialis dominica **Lesser Golden Plover**

91 recorded, but only in Nov: 1 at Ta'izz sewage lagoons, 19 Nov; at Al Fazzah, 20 on 22 Nov and 70 on 23 Nov.

A winter visitor and passage migrant, though local. Other records as follows: 1, Ra's Katanib, 25 Sep 1982; 1, Yakhtul, 7 Oct 1983 (JK); 1 (probable), Dhamar, 17 Nov 1979 (Phillips 1982); many at Al Fazzah, 26 Dec 1985 (NOSY); 3 Hodeidah, 31 Dec 1975 (JSA); 5, Nukhaylah, 2 Jan 1984 (RFP); 6, Al Fazzah, 19 Jan 1982 (Brockie 1985); up to 46 at Al Khawkhah, 12-13 Apr 1980 (MASB, SCM).

Pluvialis squatarola **Grey Plover**

208 recorded, 13 Oct-29 Nov, all on the coast except as follows: 24 (up to 15 daily) at Hodeidah sewage lagoons; 2 at pools east of Al Qutay'; 2 at Ta'izz sewage lagoons.

A common winter visitor and passage migrant, also summering in smaller numbers, though not yet recorded in May (MIE). Phillips (1982) saw flocks flying out to sea at the end of Oct. Highest winter count 15 on 10 Jan (RFP).

Hoplopterus spinosus **Spur-winged Plover**

91 recorded, 13 Oct-23 Nov, all at Hodeidah sewage lagoons (where up to 20 present at once) except for 3 at pools east of Al Qutay' and 1 at Al Fazzah.

Breeds on the Tihamah, and apparently resident. Breeds in the Hodeidah sewage lagoons area, perhaps 10 pairs (NOSY, DDP); possible breeding records also from Nukhaylah (9 adults present) and Zabid (1 pair) (Deetjen 1971; MIE), and there are spring records south to Al Mukha (NOSY). Recorded nesting in Jun, and possibly breeding Mar-Apr and Jul (Cornwallis & Porter 1982; MIE). Winter records include 2 holding territory at Al Maraziqah on 13 Jan, and 26 at Al Fazzah on 19 Jan (Brockie 1985).

Chettusia leucura **White-tailed Plover**

11 recorded, mostly on flooded areas of cultivation on the Tihamah: east of Al Qutay' on 18 Oct (1), 13 Nov (5) and 27 Nov (2), and at Wadi Mawr on 19 Oct (1); also singles on the coast at Al 'Urj on 26 Oct and at Al Fazzah on 23 Nov.

Apparently a winter visitor and/or passage migrant in small numbers at the few suitable areas of habitat. Only 2 other records: 1 at Hodeidah sewage lagoons, 23 Nov 1984 (JF, S. Fenwick); 3 at Al Fazzah marsh, 26 Dec 1985 (NOSY). Said to be only a passage migrant in Saudi Arabia (Jennings 1981) but winters occasionally in Oman (Gallagher & Woodcock 1980). North Yemen is at the southern limit of the species' wintering range.

Calidris canutus **Knot**

Not recorded during the Expedition.

Only 1 record: 19 at Nukhaylah, 10 Jan 1982 (Brockie 1985). Except for South Africa, this species does not occur regularly anywhere in the western Indian Ocean and adjacent areas.

Calidris alba **Sanderling**

280 recorded, 13 Oct-27 Nov, all on the coast except for 2 records (of 2 and 25 birds) at Hodeidah sewage lagoons and a single at Ta'izz sewage lagoons.

A common winter visitor and passage migrant on coasts, but, unlike many of the waders, apparently not summering in any numbers, as no May-Jul records (MIE). Immatures present through Aug and returning adults from 29 Aug, with numbers building up in Sep (MIE). Highest counts of c. 100 in autumn (12-13 Oct, Al Luhayyah: Phillips 1982), 200 in winter (13 Jan, Al Maraziqah: Brockie 1985), and 100 in spring (10-11 Mar, Hodeidah: Cornwallis & Porter 1982). The only records away from the coastal strip are 2 near Zabid on 19 Sep and 2 at Ta'izz sewage lagoons on 28 Sep (MIE).

Calidris minuta **Little Stint**

The commonest wader inland. 480 of the 699 recorded were at fresh water, including 1 at Ma'rib in the interior, though most were at the sewage lagoons of Hodeidah (up to 200 daily) and Ta'izz (up to 40). Peak daily numbers on the coast were at Al Luhayyah (50), the bay south of Hodeidah (40) and Al Fazzah (30). Recorded 13 Oct-2 Dec.

A common winter visitor and passage migrant on coasts and at suitable sites inland – but apparently not summering in any numbers as no Jun-Jul records (MIE). Extreme dates 16 Aug-27 May. Phillips (1982) recorded hundreds of stints (presumably Little Stint) at Al Luhayyah in Oct, and peak numbers in winter are 40 at Hodeidah sewage lagoons (10 Jan: RFP) and 200 at both Nukhaylah (10 Jan) and Al Fazzah (19 Jan: Brockie 1985).

Calidris temminckii **Temminck's Stint**

42 recorded, 16 Oct-2 Dec. Six were found on the coast (at the bay south of Hodeidah, and north of Al Mukha), but the remainder were at water inland, including 1 at Ma'rib. Most were at the two sets of sewage lagoons, though only 2 records at each: of 1 and 12 birds at Hodeidah, and of 7 and 10 at Ta'izz.

A winter visitor and passage migrant in small numbers at both coastal and fresh waters on the Tihamah, at Ta'izz sewage lagoons, and (once, 11 Oct: Phillips 1982) in the highlands. Extreme dates so far 17 Aug-13 Apr, though scarce in spring.

Calidris subminuta **Long-toed Stint**

Not recorded during the Expedition.

Phillips (1982) noted 2 records but no description was published: 5 at Al Luhayyah, 12 Oct; c. 25 at Al Fazzah, 30 Oct.

Calidris acuminata **Sharp-tailed Sandpiper**

Not recorded during the Expedition.

One record, the only one in Arabia: 1 at Ta'izz sewage lagoons, c. 12 Dec 1982 (JK). A description is held in the OSME archives.

Calidris ferruginea **Curlew Sandpiper**

165 recorded, 13 Oct-2 Dec, of which 68 were on the coast. 82 of the birds recorded inland were at Hodeidah sewage lagoons with 3-40 present. Seen as far inland as Ta'izz sewage lagoons (6) and in the interior at Ma'rib (1).

A winter visitor and passage migrant in small to moderate numbers, mostly on or near the coast. Extreme dates 13 Jul-7 May. Winter maxima of 15 inland (10 Jan, Hodeidah sewage lagoons: RFP) and 200 on the coast (4 Feb, Nukhaylah: Brockie 1985).

Calidris alpina **Dunlin**

139 recorded, 13 Oct-2 Dec, of which 73 were on the coast. 56 of the birds inland were at Hodeidah sewage lagoons with 5-21 present. However, seen at fewer sites inland than Curlew Sandpiper, with other records only at Ta'izz sewage lagoons (9) and Ma'rib (1).

A winter visitor and passage migrant, usually in small numbers, mostly on or near the coast. The biggest count is of 100 at Al Fazzah on 19 Jan (Brockie 1985), though 5 (10-11 Mar) is the highest for spring (Cornwallis & Porter 1982) – wintering birds perhaps tend to leave earlier than most other wader species. Extreme dates 21 Sep-15 Apr.

Limicola falcinellus **Broad-billed Sandpiper**

19 recorded, 25 Oct-26 Nov, on the coast between Yakhtul and Al Luhayyah, with 13 at Ar Ru'ays on 2 Nov.

A winter visitor and passage migrant. It seems usually to be scarce and local, though the first record, at Al Luhayyah, was of hundreds in flocks of up to c. 50 on 12 Oct, with numbers declining daily to zero by 19 Oct (Phillips 1982). The only other records are of 9 at Yakhtul on 21 Sep 1984 (JK), 3 at Ar Ru'ays on 10 Jan 1986 (MIE) and 2 at Nukhaylah on 4 Feb 1982 (Brockie 1985).

Philomachus pugnax **Ruff**

156 recorded, 13 Oct-27 Nov. Most were at the two sets of sewage lagoons, with up to 25 present at each: 53 recorded altogether at Hodeidah, 60 at Ta'izz. Others were at pools east of Al Qutay' (9) and in Wadi Mawr (8), at Ta'izz marsh (1), and on the coast (25, of which 20 were at Al Fazzah).

Not uncommon as an autumn migrant at the few suitable sites, with 40 at Ta'izz sewage lagoons on 18 Aug (MIE). Recorded in all months (JF, JK), including single figures at coastal and Tihamah sites in Jan (Brockie 1985; RFP), and small numbers present through the winter at Ta'izz sewage lagoons, e.g. c. 12 in 1984/85, leaving in early May (DDP).

Lymnocryptes minimus **Jack Snipe**

One at Ta'izz sewage lagoons on 19 Nov.

One other record: 1 in Wadi Warazan, 11 Jan 1986 (NOSY). Winters at these latitudes in Africa and India and is easily overlooked.

Gallinago gallinago **Snipe**

73 recorded, 16 Oct-23 Nov. Seen mostly in single figures, in wet or damp areas from the coast to Kawkaban in the highlands. Up to 21 (19 Nov) present at Ta'izz sewage lagoons.

A winter visitor (and probably a passage migrant) in small numbers at the few suitable sites – both on the Tihamah and in the highlands. Extreme dates 8 Sep-13 Apr.

Gallinago media **Great Snipe**

Not recorded during the Expedition.

Three records: 1 at Sana'a, 5 Sep 1913 (Sclater 1917); 1 on Qa' al Haql, 10 Oct 1979 (Phillips 1982); 1 at Ta'izz sewage lagoons, 12 Dec 1982 (JK).

Gallinago stenura **Pintail Snipe**

Two recorded: 1 at a pool east of Al Qutay' on 18 Oct and 1 at Hodeidah sewage lagoons on 23 Oct.

No other records from western Arabia, though the species is easily overlooked through misidentification. The regular wintering range extends east from Pakistan, but birds are recorded rarely west to East Africa (Cramp & Simmons 1983).

Limosa limosa **Black-tailed Godwit**

32 recorded, 16 Oct-23 Nov, 14 on the coast and 18 as far inland as Ta'izz sewage lagoons. Highest counts of 8 at Hodeidah sewage lagoons and at the bay south of Hodeidah, both on 23 Oct.

A rather scarce winter visitor and passage migrant on the coast and at water inland. Apparently commonest in autumn and winter though most records are of 1-2 birds, maximum 8: e.g. in 1984/85 c. 6 at Ta'izz sewage lagoons from Nov to Jan, then declining until the last one left in early May. The earliest autumn date is 15 Jun, when 7 at Hodeidah sewage lagoons (DDP).

Limosa lapponica **Bar-tailed Godwit**

200 recorded, 15 Oct-26 Nov, all on coast between Al Mukha and Al Luhayyah, up to 40 at each site.

A common winter visitor and passage migrant on coasts. Peak counts of c. 100 in autumn (12-23 Oct, Al Luhayyah: Phillips 1982), 140 in winter (4 Feb, Nukhaylah: Brockie 1985) and 105 in spring (15 Apr: MIE). Recorded in all months except May (including 16 at Al 'Urj on 10 Jun: MIE), though the main autumn passage is from late Sep. Only one inland record: 4 at Ta'izz sewage lagoons, 28 Sep 1984 (MIE).

Numenius phaeopus **Whimbrel**

39 recorded, 25 Oct-26 Nov, all on the coast between Al Mukha and Al Luhayyah, up to 20 at each site.

Mainly a passage migrant (especially numerous in spring), and also a winter visitor, in small numbers on coasts (no inland records). Peak counts of 22 in autumn (21 Oct, Hodeidah: RFP, NJR), 16 in winter (30 Jan, Al Luhayyah: Brockie 1985) and 240 in spring (12 Apr, Al 'Urj: MIE). Recorded in all months except May.

Numenius tenuirostris **Slender-billed Curlew**

Not recorded during the Expedition.

One record: 1 at Hodeidah sewage lagoons, 1-10 Jan 1984 (Porter 1984). Apart from unconfirmed sightings in Djibouti and on Aldabra (Cramp & Simmons 1983), this is the southernmost-ever record of a species which is now rare everywhere.

Numenius arquata **Curlew**

73 recorded, 13 Oct-26 Nov; 3 at Hodeidah sewage lagoons but all others on the coast with a peak count of 20 at Al Luhayyah.

A not-uncommon winter visitor and passage migrant on coasts and at nearby fresh water. The only record well inland is of 1 at Ta'izz sewage lagoons on 9 Jan (MIE). Phillips (1982) saw hundreds at Al Luhayyah 12-23 Oct, though Mar-Apr records are only of single figures (Cornwallis & Porter 1982; MASB, SCM). Like Dunlin, most birds perhaps leave rather early. Highest winter count 26 (1 Feb, Al Khawbah: Brockie 1985). Extreme dates 3 Jul-15 Apr.

Tringa erythropus **Spotted Redshank**

41 recorded, 13 Oct-27 Nov: 2 singles on the coast (at the bay south of Hodeidah), 14 at Hodeidah sewage lagoons (up to 8 present), 10 at pools east of Al Qutay', and 15 at Ta'izz sewage lagoons (14 on 19 Nov).

A rather scarce passage migrant on the coast and elsewhere, and only 3 Dec-Jan records: 1 at Hodeidah sewage lagoons in Dec 1984 and 1-2 there on 1-2 Jan 1984 (JF, RFP); 11 at Ta'izz sewage lagoons on 9 Jan 1986 (MIE). Extreme dates 10 Oct-25 Apr.

Tringa totanus **Redshank**

168 recorded, 13 Oct-28 Nov. Most (132) were on the coast, with up to 30 at each site. Also seen at Hodeidah sewage lagoons (20, with 14 present on one occasion), at pools in Wadi Mawr (1) and east of Al Qutay' (2), and at Ta'izz sewage lagoons (13).

A rather common non-breeding visitor (present all year) on the coast and at water inland. Highest counts of c. 200 in autumn (23 Oct, Hodeidah: Phillips 1982), 300 in winter (10 Jan, Nukhaylah: Brockie 1985), 50 in spring (9 Mar, Yakhtul: JK) and 32 in summer (10 Jun, Al 'Urj: MIE).

Tringa stagnatilis **Marsh Sandpiper**

24 recorded, 13 Oct-27 Nov: 15 at Hodeidah sewage lagoons (up to 6 present),3 at pools east of Al Qutay', 3 at Ta'izz sewage lagoons and 3 singles on the coast at Al Khawkhah and Al Fazzah.

An uncommon winter visitor and passage migrant on the coast and at water inland, recorded 3 Jul-25 Apr (MIE, DDP). The highest winter count is 15 at Nukhaylah on 10 Jan (Brockie 1985).

Tringa nebularia **Greenshank**

98 recorded, 15 Oct-29 Nov. Most (59) were on the coast with a highest count of 10 at Al 'Urj; 18 on the Tihamah, mostly at pools east of Al Qutay' (12) and Hodeidah sewage lagoons (5); also 3 in the foothills, 15 around Ta'izz and 3 in the highlands.

A not-uncommon winter visitor and passage migrant on the coast and at water inland. Highest autumn counts of c. 50 in the highlands (10 Oct, Qa' al Haql) and 25 on the coast (12 Oct, Al Luhayyah) (Phillips 1982); highest in winter 46 (10 Jan, Nukhaylah: Brockie 1985), in spring 25 (12 Apr, Ta'izz sewage lagoons: RPM). Recorded in all months except May (MIE, DDP).

Tringa ochropus **Green Sandpiper**

61 recorded, 13 Oct-3 Dec. Only 1 seen on the coast (in mangroves at Al 'Urj), all others being at water inland, mostly (40) in the highlands, including 18 around Ta'izz, and as high as Kawkaban; 1 at Ma'rib 1-2 Dec.

A not-uncommon winter visitor and passage migrant at fresh water inland, including the highlands – though few spring records. Peak counts of 60 in autumn (18 Aug, Ta'izz sewage lagoons: MIE) and 5 in winter (15 Feb, Wadi Surdud: Brockie 1985). Extreme dates 27 Jun-12 Apr.

Tringa glareola **Wood Sandpiper**

39 recorded, 16 Oct-27 Nov: 3 on the coast (at the bay south of Hodeidah, 23 Oct), 9 at Hodeidah sewage lagoons (15-23 Oct), 7 elsewhere on the Tihamah and 20 around Ta'izz (31 Oct and 19 Nov) – but, unlike Green Sandpiper, none elsewhere in the highlands.

A winter visitor and passage migrant, mainly to fresh water. Uncommon in autumn and winter and rather scarce in spring. There are generally no more than 5 birds present at a site, but the highest counts are of 20 in autumn (8 Sep, Hidhran: MIE) and 40 in winter (25 Feb, Ta'izz sewage lagoons: JK), though only 7 in spring (13 Apr, Ta'izz sewage lagoons: RPM). Extreme dates 17 Aug-13 Apr.

Xenus cinereus **Terek Sandpiper**

91 recorded, 15 Oct-26 Nov, all on the coast. Peak counts of 20 at Al 'Urj and 25 at Ar Ru'ays.

A winter visitor and passage migrant on coasts (no inland records). Rather common in autumn and winter but uncommon in spring. Peak counts of at least 200 in autumn (12-23 Oct, Al Luhayyah: Phillips 1982), 120 in winter (10 Jan, Nukhaylah: Brockie 1985) and 20 in spring (12 Apr, Al Khawkhah: MASB, SCM). Recorded in all months except May, and 9 present at Al 'Urj on 10 Jun (MIE).

Actitis hypoleucos **Common Sandpiper**

108 recorded, 13 Oct-2 Dec, on coasts (36 altogether) and at water inland (including the highlands and 1 at Ma'rib). Only single figures at each site except for records of 15 at Al 'Urj, 15 at Hodeidah sewage lagoons and 17 at Ta'izz.

Common in winter and on passage – and, unlike most other waders, apparently as common in spring as in autumn. Peak counts of 125 in autumn (18 Aug, Ta'izz sewage lagoons: MIE), 15 in winter (2 Jan, Hodeidah sewage lagoons : RFP) and 40 in spring (13 Apr, Ta'izz sewage lagoons: RPM). Recorded in all months.

Arenaria interpres **Turnstone**

84 recorded, 15 Oct-26 Nov, all on the coast. Peak counts of 14-15 at Al Mukha, Hodeidah and Al Luhayyah.

A rather common winter visitor and pasage migrant on coasts (no inland records). Maxima of c. 25 in autumn (12-23 Oct, Al Luhayyah: Phillips 1982), 45 in winter (10 Jan, north of Hodeidah: RFP) and 15 in spring (10-11 Mar, Hodeidah: Cornwallis & Porter 1982). Only one record between 15 Apr and 17 Aug: 2 at Al'Urj on 10 Jun (MIE, RPM).

Phalaropus lobatus **Red-necked Phalarope**

A juvenile at Al Fazzah, 22 Nov.

Only 3 other records: a female at Sana'a, 6 Sep 1913 (Sclater 1917); 1 at Ta'izz sewage lagoons, Jan or Feb 1986 (M. Halliday); 1 at Ta'izz sewage lagoons, 16 Mar 1985 (DDP).

Stercorarius parasiticus **Arctic Skua**

Two off Al Fazzah on 22 Nov.

Three others: 1 at Hodeidah on 10 Mar 1982, 1 at Al Khawkhah on 14 Apr 1979 (Cornwallis & Porter 1982) and 1 at Al Khawkhah 31 Dec 1983 (RFP). Despite the lack of records, both Pomarine and Arctic Skuas are presumably regularly present offshore.

Stercorarius sp. **Skua sp.**

Five skuas seen at c. 1.5 km. range, off Ar Ru'ays, on 3 Nov were thought to be Pomarine *S. pomarinus*. There are no other reports of the species from North Yemen.

Larus hemprichii **Sooty Gull**

Easily the commonest coastal gull, with 1,836 recorded, 13 Oct-29 Nov. None seen inland apart from 5 at Hodeidah sewage lagoons on 16 Oct. Highest count 250 at the bay south of Hodeidah.

Common all along the mainland coast from at least Jun to Apr (MIE) and present, at least at Hodeidah, also in May (JF). The highest count is of over 500 feeding on dumped fish at Al Maraziqah, 13 Jan (Brockie 1985); 400 counted at Hodeidah, 15 Apr (RPM). May well breed on offshore islands but no evidence – though Phillips (1947) saw birds near Zubayr (c. 60 km. offshore) and around the Hanish group of islands on 30 Jun, and c. 300 were on Hataban (c. 25 km. offshore, near Al Luhayyah) on 17-18 Oct (Phillips 1982). Known to breed on the Farasan archipelago just north of the North Yemen border; recorded breeding May-Sep off eastern Arabia, and Jun to early Sep in the southern Red Sea (Clapham 1964; Gallagher *et al.* 1984). According to Bailey (1966), many appear to move south out of Arabian waters for the winter.

Larus leucophthalmus **White-eyed Gull**

Much less common than Sooty Gull, with 221 recorded, 15 Oct-29 Nov, all on the coast. Highest counts were 30 around Hodeidah and at Al Fazzah.

Not uncommon all along the mainland coast from at least Jul to Apr (MIE) and present, at least at Hodeidah, also in May-Jun (JF). Highest mainland counts are 100 at Hodeidah on 10-11 Mar and at Al Khawkhah on 12-14 Apr (Cornwallis & Porter 1982). Unlike Sooty Gull, less common in winter than in autumn and spring, with highest winter count of 50, at Ar Ru'ays (MIE). May well breed on offshore islands but no evidence, though Phillips (1982) saw c. 200 on Kitamah c. 45 km. offshore near Al Luhayyah on 18-19 Oct and birds were present on the Haycocks islets (closer to Ethiopia than to the North Yemen mainland) in Nov (Morris 1962). Breeds just north of the North Yemen border (Gallagher *et al.* 1984) and Jul is the main laying period in the Red Sea (Cramp & Simmons 1983).

Larus ichthyaetus **Great Black-headed Gull**

Not recorded during the Expedition.

A rather rare winter visitor to the coast, and seen once inland: 3 at Al Mukha, 21 Jan 1982; 1 at Ibn 'Abbas, 2 Feb 1982 (Brockie 1985); 1 2nd-winter at Ta'izz sewage lagoons, 14 Feb 1986 (MIE); 2 adults and 2 2nd-years (1 ringed) at Hodeidah, 10-11 Mar 1982 (Cornwallis & Porter 1982); 3 at Al Khawkhah, 12-13 Apr 1980; 1 at Hodeidah, 15 Apr 1980 (MASB, SCM); 1 dead at Al 'Urj, 15 Apr 1986 (MIE).

Larus ridibundus **Black-headed Gull**

Not recorded until 19 Nov, but 278 seen between then and 29 Nov – on the coast, at water inland on the Tihamah, and at Ta'izz sewage lagoons. Peak counts of 80 at Hodeidah sewage lagoons and 100 in the bay south of the town, both on 23 Nov.

A common winter visitor, apparently arriving mid-Nov. Only 2 records between 16 Apr and 19 Nov: 3-4 at Ta'izz sewage lagoons on 27 July and 17 Aug (JK). Highest counts in Jan of 150 at Hodeidah sewage lagoons (RFP), 120 on the nearby coast and 900 at Al Mukha (Brockie 1985). Numbers decrease by Mar, and the birds remaining then are apparently largely or wholly 1st-years: 30 at Hodeidah on 10-11 Mar, and single figures there in the first half of Apr (Thiollay & Duhautois 1976; Cornwallis & Porter 1982; MASB, SCM). This is generally the only gull found inland.

Larus genei **Slender-billed Gull**

32 recorded, 17 Oct-29 Nov, at various sites on the coast. The highest count was of 11 at Ar Ru'ays on 3 Nov.

A winter visitor (and perhaps passage migrant also) on the coast, recorded in all months except May; the only inland records are of 8-12 at Hodeidah sewage lagoons (close to the coast) in Apr and Jun-Jul (MIE, JF, J. Hollingworth). Generally scarce, with records usually of single figures but 86 counted at Al Luhayyah on 30 Jan (Brockie 1985). By Mar, birds remaining are largely 1st-years, e.g. 50 at Hodeidah on 10-11 Mar and 20 there on 16 Apr (Cornwallis & Porter 1982). Phillips (1982) saw c. 10 per day, all adults, moving south down the coast 12-23 Oct and 30 Oct-2 Nov.

Larus fuscus **Lesser Black-backed Gull**

462 recorded, 13 Oct-29 Nov, with 435 of these in the period up to 3 Nov. Except for 3 at Hodeidah sewage lagoons on 16 Oct, all were on the coast, especially around Hodeidah, with 100 in the bay south of the town on 15 Oct. Adults appeared to be typical of the nominate (north-west European) race.

A common winter visitor (and presumably also passage migrant) on coasts and adjacent fresh water; recorded in all months except May (MIE). Highest counts are of 200 in winter (Hodeidah, 2 Jan; RFP) and 150 in spring (Hodeidah, 15 Apr: RPM). See also Herring Gull (below).

Larus argentus **Herring Gull**

As common overall as Lesser Black-back, with 461 recorded, 13 Oct-29 Nov, but 410 of these were in the final 8 days of this period. Except for 1 at Hodeidah sewage lagoons on 13 Oct, 3 at Ta'izz sewage lagoons on 31 Oct and 5 there on 19 Nov, all were on the coast, with a highest count of 200 in the bay south of Hodeidah on 23 Nov. Adults appeared to be only of the races *heuglini* and *taimyrensis* (see below), in roughtly equal numbers. In addition, 190 unidentified Lesser Black-backed/Herring Gulls were recorded, 22 Oct-13 Nov, all on the coast.

A common winter visitor on coasts and adjacent fresh water, though scarce further inland. Extreme dates 19 Sep-15 Apr, with highest counts of 50 in winter (1 Jan 1984, Hodeidah: RFP) and 30 in spring (10-11 Mar, Hodeidah: Cornwallis & Porter 1982); though Apr records are of only 1-2 birds (MASB, MIE, SCM, RPM) and Cornwallis and Porter (1982) did not find it in that month. Expedition data and MIE's winter experience suggest that this species is essentially a winter visitor and Lesser Black-back essentially a passage migrant (Phillips 1982, and RFP and NJR in 1982, also found Lesser Black-back the commoner species in Oct), but some winter visits (Brockie 1985; RFP) indicate more or les equal numbers of the two at that season. However, field identification of some of the races involved is difficult and not often seriously attempted – nor is there even agreement in the literature about which species the various races belong to. Thus, Cramp and Simmons (1983) indicate that races occurring in the southern Red Sea should include *fuscus* (north-west Europe – blackish mantle), *heuglini* and *taimyrensis* (north-central Siberia – slightly paler), and perhaps also the *cachinnans* group of races (Black Sea and central Asia – paler still): *fuscus* is now usually treated as Lesser Black-back and the *cachinnans* group as Herring (or as a separate species(, but *heuglini* and *taimyrensis* are still shuffled periodically between the two species. Most observers are probably making similarly erratic allocation of individual birds to species, and the Arabian region badly needs some thorough work to resolve this unglamorous problem.

Gelochelidon nilotica **Gull-billed Tern**

106 recorded, 13 Oct-29 Nov. 98 were on the coast between Al Mukha and Al Luhayyah, with a highest count of 16. Also 6 at Hodeidah sewage lagoons and 2 at a flooded field in Wadi Mawr.

A not-uncommon winter visitor and passage migrant on the coast and occasionally at fresh water on the Tihamah; also 1 seen at Ta'izz sewage lagoons on 17 Aug (JK). Maximum daily counts of 30 in autumn (MIE), 32 in winter (Brockie 1985), and 20 in spring (MASB, SCM). Recorded in every month except May (MIE). All the birds seen by Phillips (1982), 12 Oct-3 Nov, were heading south, but this was not the case with Expedition records.

Sterna caspia **Caspian Tern**

127 recorded, 13 Oct-26 Nov, all on the coast except for 1 at Hodeidah sewage lagoons. Highest count 60, at Al Luhayyah. 2 birds on 2-3 Nov were in complete breeding plumage (all others had moulted at least partially into non-breeding), and one of these was carrying food.

Not uncommon as a winter visitor and passage migrant to the coast, recorded in all months except May. Seen also in small numbers (up to c. 20) on offshore islands in autumn (Phillips 1982), but no evidence of nesting; the Red Sea breeding season is Mar-May (M. C. Jennings).

Maximum daily counts of 70 in late summer/autumn (on 2 Jul: MIE), 32 in winter (Brockie 1985) and 20 in spring (MASB, SCM). Ringed birds have been seen in Jan and Mar (Cornwallis & Porter 1982; Brockie 1985).

Sterna bergii **Swift Tern**

270 recorded, 15 Oct-26 Nov, all on the coast. Many adults were feeding dependent juveniles, and one seen on 15 Oct at Hodeidah was so young that it had probably fledged locally. During the first hour after dawn on 21 Oct at the spit north of Hodeidah, 100 adults came in from the sea and moved south along the shore.

A winter visitor and passage migrant to coasts in moderate numbers, recorded in all months except May. Maximum daily counts of over 250 in winter (Brockie 1985), 30 in spring (MASB, SCM) and 93 in summer (Al 'Urj, 10 Jun: MIE). Phillips (1982) saw over 100 on Hataban island, 17-19 Oct, but the very young juvenile referred to above is the only indication so far of breeding in the country. Nests as close as c. 200 km. north of the North Yemen border, in the western Gulf of Aden off Somalia, and near Aden; laying recorded May-Sep in Arabian waters (Meinertzhagen 1954; Gallagher *et al.* 1984).

Sterna bengalensis **Lesser Crested Tern**

The commonest tern, with 465 recorded, 13 Oct-26 Nov, all on the coast. Highest counts were of 300 at Al 'Urj on 26 Oct and 100 at Ar Ru'ays on 3 Nov. Many dependent juveniles were present.

A winter visitor and passage migrant to coasts in moderate numbers, recorded in all months except May. The commonest coastal tern present in summer (128 adults at Al 'Urj, 3 Jul: MIE), though most do not remain to winter – usually less common then than Swift Tern and occurs mostly in single figures, though there is a count of 250 (RFP). Highest spring count 250, 10-11 Mar (Cornwallis & Porter 1982). Phillips (1982) saw over 1,000 on Hataban island, 17-19 Oct, but there is no evidence of nesting in North Yemen (*contra* Cramp 1985) though breeding occurs as close as c. 200 km. north of the border off Saudi Arabia and in the western Gulf of Aden off Somalia; nesting recorded May-Aug in Arabian waters (Gallagher *et al.* 1984).

Sterna sandvicensis **Sandwich Tern**

18 recorded, 15 Oct-29 Nov. All were on the coast and most at the bay south of Hodeidah.

Apparently a rather local and generally uncommon winter visitor and passage migrant to coasts, though can occur in good numbers. Thus, in autumn, not recorded by Phillips (1982), but RFP and NJR counted 100 north of Hodeidah on 21 Oct. Only 4 winter records: in Dec, 2 at Hodeidah (JSA), 60 at Al 'Urj (MIE) and 120 at Al Khawkhah (RFP), and in Jan 66 at Al Maraziqah (Brockie 1985). Several spring records, including 100 on 10-11 Mar (Cornwallis & Porter 1982) and 75 at Al Khawkhah on 12 Apr (MASB, SCM). 73 seen on 10 Jun and 1 on 12 Jul (MIE), but extreme dates otherwise are 7 Oct-18 Apr.

Sterna hirundo **Common Tern**

One near Al Khawkhah on 3 Nov. Also 1 probable at Al 'Urj on 26 Oct and 4 north of Al Mukha on 2-3 Nov.

Seven other records: 2 at Al Mukha, 21 Jan (Brockie 1985); present at Al Khawkhah, 10 Feb 1983 (JK); 50 at Al Khawkhah, 13-15 Apr (Cornwallis & Porter 1982); 5 at Ta'izz sewage lagoons, 7 May 1985 (DDP); 1 (dead) north of Jabal Bura', 7 Jun 1986 (MIE); present at Yakhtul, 7 Oct 1983 (JK); 3 at Ta'izz sewage lagoons, 2 Dec 1982 (JK).

Sterna repressa **White-cheeked Tern**

395 recorded, 25 Oct-26 Nov, all on the coast. Counts included 170 north of Al Mukha on 2 Nov, 100 at Al Fazzah on 22 Nov, and 120 at Al Luhayyah on 26 Nov. All birds seen were in non-breeding plumage.

Present on mainland coasts from at least Jul to Apr. Scarce or local, especially in winter, though 150 were seen at Al Mukha on 21 Jan 1982 (Brockie 1985). Phillips (1982) recorded

c. 100 on Hataban, 17-19 Oct, and display has been seen in Jul (MIE), but there is no other indication yet of breeding (the data given by Gallagher *et al.* 1984 for the Hanish islands actually refer to Bridled Tern: Phillips 1947). Nests in mid-summer in the Red Sea; some remain in the southern Red Sea (offshore) in winter, but most move out (Cramp 1985).

Sterna anaethetus **Bridled Tern**

Not recorded during the Expedition.

May breed, being apparently present through spring, summer and autumn, but seems to stay well offshore and so is not often seen. Only 4 autumn records: 6 south of Al Khawkhah on 8 Sep (MIE), 14 off Yakhtul on 7 Oct (JK) and 1 off Al Luhayyah on 18 Oct (Phillips 1982). It has not been seen in winter and the only spring records are from Al Khawkhah, all during 12-15 Apr, with a maximum count of 100 (Cornwallis & Porter 1982; MASB, SCM, RPM). Phillips (1947) saw large flocks near the Hanish group of islands in Jun, and it is known to nest on the Farasan archipelago just north of the North Yemen border; breeds May-Aug in Arabian waters, and Red Sea breeders then apparently move south to winter in east African seas (Harrison 1983; Gallagher *et al.* 1984).

Sterna saundersi **Saunders' Little Tern**

125 recorded, 15 Oct-26 Nov, all on the coast except for 5 birds on 3 dates at Hodeidah sewage lagoons. Highest count of 40 between Ibn 'Abbas and Al Khawbah, 25 Nov.

Apparently present on coasts all year, though little information for summer. Not uncommon in autumn and spring, with highest daily counts of 127 (22 Oct, Hodeidah: RFP, NJR) and 150 (15 Apr, Hodeidah:MASB, SCM), but perhaps scarcer in winter with a peak count of 25 (RFP) (east Saudi Arabian breeders are migrants, largely absent Nov to late Feb: Bundy 1986a). A pair nested unsuccessfully at Hodeidah in summer 1985 (NOSY), but the Jiddah area, c. 700 km north of the North Yemen border, is the closest known regular breeding site, with nesting May-Jun – though breeding perhaps occurs also on the Farasan archipelago just north of the border (Gallagher *et al.* 1984). All Little Tern-type birds have been assigned here to *S. saundersi* on the basis of currently-understood distributions, but the absence of *S. albifrons* cannot be guaranteed given the identification problems – and Cramp (1985) believes that the two are conspecific in any case.

Chlidonias hybridus **Whiskered Tern**

19 recorded: up to 5 (adults and juveniles) present at Hodeidah sewage lagoons, 13-23 Oct; 1 at pools east of Al Qutay', 18 Oct; 2 at flooded fields in Wadi Mawr, 19 Oct; 2 at Ta'izz sewage lagoons, 19 Nov.

Six other records: 1 at Hodeidah sewage lagoons, 14 Jul 1984 (MIE); 3 at Ta'izz sewage lagoons, 18 Aug 1985 (MIE); 1 at Al Khawkhah, 18 Sep 1983 (JK); 2 at the head of Wadi Bana on Qa' al Haql, 3-10 Oct 1979 (Phillips 1982); 1 at Al Luhayyah, 20 Oct 1979 (Phillips 1982); 1 at Ta'izz sewage lagoons, 31 Dec 1984 (DDP).

Chlidonias niger **Black Tern**

Not recorded during the Expedition.

One record: 2 at Ta'izz sewage lagoons, 2-12 Dec 1982 (JK).

Chlidonias leucopterus **White-winged Black Tern**

The only tern seen commonly inland. 281 counted, 13 Oct-27 Nov, including only 2 records (12 birds and a single) on the coast. Otherwise seen at Hodeidah sewage lagoons (up to 68 present), pools east of Al Qutay' (up to 30), a flooded field in Wadi Mawr (5), and Ta'izz sewage lagoons (15). Almost all were juveniles – e.g. at Hodeidah sewage lagoons on 16 Oct, at least 39 of the 40 birds present.

A rather common autumn migrant (seen from 14 Jul: MIE) at the few suitable inland waters and only occasionally on the coast. Few records after Nov, though the best site (Hodeidah sewage lagoons) has not been much visited except in autumn: 3 at Hodeidah sewage lagoons,

1-10 Jan 1984 (RFP); 3 at Ta'izz sewage lagoons on 14 Feb 1986 (MIE), 2 there on 25 Feb 1983 and 1 on 4 Mar (JK); present at Hodeidah sewage lagoons on 21 Mar 1986 (NOSY); 2 at Ta'izz sewage lagoons on 12 Apr 1986 (RPM).

Anous sp. **Noddy sp.**

None recorded during the Expedition.

Noddies, presumably all Brown Noddy *A. stolidus*, have been recorded only as follows: seen fairly regularly off Hodeidah 1983-84 (JF, R. Self); 2 landed by some swimmers near Ra's Katanib in spring 1985 (NOSY); an adult at Hodeidah sewage lagoons, Jun 1984 (JF); 1 at Al 'Urj, 12 Jul 1983 (MIE); 1 landed on a bather's head near As Salif, 18 Oct 1985 (NOSY). Brown Noddy breeds off south-west Saudi Arabia and is recorded nesting Jun-Aug in Arabian waters (Cooper *et al.* 1984; Gallagher *et al.* 1984).

Rynchops flavirostris **African Skimmer**

Not recorded during the Expedition.

One at Al Fazzah on 1 Nov 1979 (Phillips 1982) is the only one seen in North Yemen, and the only one from Arabia or its inshore waters. This is much the likeliest species of *Rynchops* to reach western Arabia, though the similar Indian Skimmer *R. albicollis* has occurred in eastern Oman (Gallagher & Woodcock 1980).

Pterocles lichtensteinii **Lichtenstein's Sandgrouse**

34 recorded, in groups of up to 8, at scattered sites in the eastern Tihamah, lower foothills, the dry plains of the north-east highlands, the eastern flanks and in the interior around Ma'rib. Highest record at 1,800 metres, south of Sa'dah.

A rather scarce occupant of dry, stony or hilly *Acacia* scrub and other thinly vegetated areas as noted above. Recorded so far only Aug-Apr but presumably resident as Phillips (1982) saw a half-grown juvenile in Sep.

Pterocles coronatus **Crowned Sandgrouse**

Not recorded during the Expedition.

Resident in the desert of south-west Saudi Arabia (Jennings 1981) and probably also the adjacent interior of North Yemen, but only two records from there so far. One in Wadi Jawf, 5 Oct 1936 (Bates 1937a). A flock of 19 (8 males, 11 females), plus one lone bird, 10 km. north-west of Ma'rib, 24 Apr 1986; display noted (Martins 1986).

Pterocles exustus **Chestnut-bellied Sandgrouse**

A total of 1,104 (up to 260 per day), all on the Tihamah. Usually seen flying overhead.

A common resident breeder on sandy areas of the Tihamah. Hundreds visit the water hole at Ra's Katanib every morning (DDP).

Columba livia **Rock Dove**

3,022 recorded, from all regions visited, though not common on the Tihamah except around towns (especially Hodeidah). Peak count of 300 at Kawkaban.

Common resident except as noted above.

Columba arquatrix **Olive Pigeon**

At least 4 in tall trees in a well-vegetated valley (with many fruiting olive *Olea* trees) near Al Mahwit on 11 Nov.

Not seen before in North Yemen, though recorded Mar-Jul in south-west Saudi Arabia in recent years (Jennings 1986). An African species, resident or nomadic (Urban *et al.* 1986).

Streptopelia roseogrisea **African Collared Dove**

328 recorded, all on the Tihamah except for one at 2,100 metres near Ma'bar. Song and display-flight recorded on 15 Oct, and song on 24 Nov, in both cases on the Tihamah.

A rather common breeding resident in areas of the Tihamah with palms and other trees or tall vegetation, also in thorn scrub; in summer, at least, also occurs in mangroves (MIE). Found recently in irrigated agricultural areas around Ma'rib in the interior (peak count of 200, 22-24 Apr: RPM), and also a few records from the Tihamah foothills and highlands.

Streptopelia semitorquata **Red-eyed Dove**

337 recorded in the better-vegetated areas with trees or scrub, mostly in the Tihamah foothills and lower mountains, but also down to c. 200 metres on the eastern edge of the Tihamah near Al Kadan and up to 2,100 metres in the southern uplands. Highest daily count 87, between 590 and 800 metres on Jabal Bura'. Not recorded east of the highland platea. Song heard 1-28 Nov.

A rather common breeding resident in the areas noted above.

Streptopelia turtur **Turtle Dove**

A total of 15, including 12 at one site: all on the Tihamah, 14-19 Oct.

A scarce migrant, and also seen once in winter. Non-Expedition records (all of ones and twos) are as follows: Wadi al Walajah, 5 Sep 1984 (MIE); Dhi Sufal, 8 Oct 1982 (JK); Qa' al Haql, 8 Oct 1979 (Phillips 1982); 18 and 24 Oct 1982 (RFP, NJR); Zabid, 1 Jan 1976 (JSA); Wadi Rima, 19 Apr 1979 (Cornwallis & Porter 1982); Ma'rib, 22 Apr 1986 (RPM).

Streptopelia lugens **Dusky Turtle Dove**

80 recorded in the better-wooded areas: all in the highlands (at 1,600-2,800 metres) except for 5 at 250 metres in the Tihamah foothills near Al Kadan and a juvenile at 140 metres on the Tihamah below Jabal Bura'. Highest count 15 at Sana near Haddah. Three birds were singing on 21 Nov and recently-fledged young seen on 29 Nov.

A not-uncommon but perhaps local breeding resident. In summer occupies the highlands below 2,800 metres, reaching down to 1,000 metres in greener parts of the western ramparts and still further down in winter (MIE). Additional records on the Tihamah are from Ad Durayhimi, Ghulayfiqah, Al Maraziqah and Wadi Rima (Cornwallis & Porter 1982; Brockie 1985). The largest count is of 60 at Ibb (RFP).

Streptopelia senegalensis **Palm Dove**

Common from the Tihamah and the edge of the interior desert (Ma'rib) up to 2,800 metres, with 1,335 birds recorded. Widespread, and less dependent on the presence of trees than the other *Streptopelia*, but most abundant in cultivated areas and usually absent from areas with only sparse and low natural vegetation (e.g. most of the extreme western Tihamah along the coast). Highest daily count of 133 north of Wadi Mawr. Song and/or display noted 5-13 Nov at 250-1,850 metres.

A common breeding resident up to 3,000 metres in the habitats noted above.

Oena capensis **Namaqua Dove**

325 recorded, in similar habitat to Palm Dove but only on the Tihamah (including the coastal strip) except for small numbers as follows: in the lower foothills near Al Kadan (2) and As Sukhnah (4), in the highlands near Sa'dah (up to 9; 1,800 metres) and in Wadi Dahr (1; 2,400 metres), and in the interior at Ma'rib (1). Highest daily count 70.

A rather common resident breeder on the Tihamah but only very local elsewhere, though perhaps more widespread along the western edge of the interior desert, as RPM recorded up to 10 at Ma'rib in Apr 1986. Additional records in the highlands are from Sana'a, Qa' al Haql (near Wadi 'Ashshar), Dhamar, Ta'izz, Wadi Attaf and Ibb (Montfort 1965; Phillips 1982; MIE, J. Hickerton, JK, NOSY).

Treron waalia **Yellow-bellied Green Pigeon**

A single bird on Jabal Bura', 28 Nov.

Rather common but local, occurring usually in well-vegetated areas with fruiting trees, and

often staying in one place only as long as abundant food supplies hold out. Found mostly in the western foothills and highlands from 600 to 2,400 metres (including the centre of Sana'a: Phillips 1982), but 2 recorded on the Tihamah at Al Kadan on 17 Apr (Cornwallis & Porter 1982) and 2 seen flying north up the coast at Al 'Urj on 12 Jul (MIE). Essentially a breeding summer visitor, present in strength only Mar-Sep. However, birds have been recorded in the southern highlands as late as 3 Dec (JK) and as early as 14 Feb (NOSY), so perhaps a few overwinter there.

Treron sp. **Green Pigeon sp.**

An all-lime-green pigeon with a dark mauvish-grey collar seen at Ta'izz on 13 Dec 1982 (JK) seems likely to have been African Green Pigeon *T. calva*, which is known to breed as close as central Ethiopia (Urban *et al.* 1986) – though there are no other reports from Arabia.

Psittacula eupatria **Alexandrine Parakeet**

Not recorded during the Expedition.

Up to 5 birds, evidently escapes, recorded in winter 1983/84 in Sana'a (RFP).

Psittacula krameri **Ring-necked Parakeet**

Three: 1 in the centre of Hodeidah on 13 Oct, 2 at Ta'izz on 18 Nov.

Presumably introduced and apparently established (though breeding not proved). Present all year in small numbers in Sana'a, Wadi Dahr, Ta'izz and Hodeidah (MIE, JF, SF).

Clamator jacobinus **Jacobin Cuckoo**

Not recorded during the Expedition.

A scarce summer visitor, recorded 19 Apr-9 Sep from the coast to the highlands, but most common in the Tihamah, foothills and the lower part of the western ramparts. Recorded from the following areas: Hodeidah, As Sarhah, Al Kadan and As Sukhnah/Bajil (all on the Tihamah), also at Jabal Bura' (500 metres), At Tur (600 metres), Khamis Bani Sa'd (c. 1,000 metres), Wadi Siham (1,200-1,300 metres), Al 'Udayn (1,400 metres), Wadi 'Ashshar (1,700 metres), Wadi Buqlan (1,700 metres) and Kitab/Wadi Bana (2,300 metres) (Cornwallis & Porter 1982; MIE, JF, JK). Breeding not proved, but singing and display recorded May-Jun (MIE, DDP). The population breeding from south-east Iran to northern India apparently migrates south-west to winter among African residents (Cramp 1985), so some Arabian records may relate to these birds on passage, and Stagg (1984) has recorded it in south-west Saudi Arabia only as a Jul-Aug passage migrant.

Chrysococcyx caprius **Didric Cuckoo**

Not recorded during the Expedition.

Rare, presumably a migrant breeder, though the only records are as follows (1,600-2,400 metres). A female at Wadi Dahr, 8 Apr 1986 (Martins 1986). One in Wadi Duba below Dhi Sufal, and a male near Al Qa'idah, both on 2 May 1985 (DDP). Two photographed west of Al Mahwit and another near Kuhlan 'Affar, late May or early Jun 1982 (A. Helbig). One caught and released near Ma'bar in the highlands, Jun or Jul 1983 (P. Bisset). One at Al 'Aljam, 6 Jul 1984, and a male singing there two weeks previously (S. Payn, MIE). Also an unidentified *Chrysococcyx* near Khamis Madhyul on 1 Jul 1984 (MIE). Didric Cuckoo is an essentially African species, not recorded from Saudi Arabia but breeding in western Oman (Gallagher & Woodcock 1980).

Chrysococcyx klaas **Klaas's Cuckoo**

Not recorded during the Expedition.

Rare, perhaps a migrant breeder, though the only record is of a pair and 3 calling males north of Ibb in late May or early Jun 1982 (A. Helbig). A bird of similar distribution in Africa to Didric Cuckoo, but unlike that species it is said to breed throughout the Asir Tihamah and foothills of south-west Saudi Arabia (Stagg 1984).

Cuculus canorus **Cuckoo**

Not recorded during the Expedition.

Not uncommon as an autumn passage migrant, having occurred from 2 Aug and through Sep (MIE) and then in small numbers until 6 Nov (Phillips 1982). Only 2 spring records: 1 on 10-11 Apr 1979 (Cornwallis & Porter 1982) and 1 on 17 Apr 1986 (Martins 1986).

Centropus superciliosus **White-browed Coucal**

26 recorded, with up to 5 per site. Most were in areas of cultivation and lusher scrub in the eastern Tihamah and lower foothills (80-250 metres), but also 3 on Jabal Bura' at up to 650 metres.

A widespread but uncommon breeding resident in the areas noted above, with several other records up to 1,000 metres.

Tyto alba **Barn Owl**

One on 26 Nov, 15 km. west of Az Zuhrah, a cultivated, silty wadi spread in the western Tihamah.

Scarce, but perhaps widely distributed. Recorded throughout the year and presumably a resident breeder. Six records in the Hodeidah area, 1982-85 (S. Fenwick, JF, DDP, RFP, NJR). Also one at Ibb on 31 Jul 1983 (JK) and a probable near At Turbah (south of Ta'izz) on 26 Sep 1984 (MIE).

Otus senegalensis **African Scops Owl**

Not recorded during the Expedition.

Perhaps a breeding resident, as in south-west Saudi Arabia and western Oman (Gallagher & Woodcock 1980; Jennings 1981; Stagg 1984), but the only records in North Yemen are the following. One calling in Wadi Buqlan at 1,400 metres on 27 Aug 1985 (MIE). Continual calling (a soft "*prrrp*" or "*krrrp*" every c. 10 sec – also duetting) heard from 1-2 birds on Jabal Bura' above Sabt al Mahrab (650 metres) on 16-19 May and 7-8 Jun 1986 (MIE). Also a probable at Wadi Dahr in late May or early Jun 1982 (A. Helbig). The race concerned is *pamelae*, included by various authors in Oriental Scops Owl *O. sunia*, Striated Scops Owl *O. brucei*, or *O. senegalensis*, or lumped with them all in a single species. On the basis of the call, we prefer to group the south-west Arabian birds with *O. senegalensis* – as, for the same reason, do Gallagher (1986) and Roberts and King (1986) with Omani birds.

Bubo africanus **Spotted Eagle Owl**

One bird calling at 590 metres on Jabal Bura' on the night of 27 Nov, and glimpsed before dawn the following morning. The call was a soft "*hoo . . . hoo hoo-hoo*"; also with five syllables, when slightly descending. Another description (NOSY) is of a sleepy, dove-like "*boooo buh-buh-booo*", the middle two notes lower.

Recorded throughout the year and probably a widespread but scarce resident breeder, essentially in the Tihamah foothills and lower highlands. There are no records of Eagle Owl *B. bubo* from south-west Arabia, and all North Yemen sightings of appropriately-sized owls are assumed to relate to *B. africanus* – and many have been positively identified. Records have come from the following areas: Wadi Siham (1,300 metres); west of Al Mahwit; Madinat ash Shirq; Ibb; Wadi Duba above Dhi Sufal and near Al Qa'idah; Wadi Warazan; an area 14 km. east of Ta'izz; Ta'izz marsh; and on the Tihamah near Wadi Surdud and Bajil (Cornwallis & Porter 1982; Martins 1986; MIE, A. Helbig, JK, DDP, RFP).

Athene noctua **Little Owl**

Not recorded during the Expedition.

Probably an uncommon resident breeder, a pair with 3 young having been seen in Jul (P. Bisset). Recorded from many areas in the highlands at 2,200-2,600 metres, also 1 in the interior near Ma'rib in Jan (RFP).

Strix butleri **Hume's Tawny Owl**

One bird heard at 18.00 hrs. (dusk) on 7 and 9 Nov from the steep rock face just below Kawkaban. Not seen, but the song is diagnostic and was recognised by those with previous experience of the species: sequences of five notes, fairly quiet and lower pitched than Tawny Owl *S. aluco* – "*hooo hoo-hoo hoo hoo*"; sequences 15-20 sec apart. The first record from North Yemen.

Presumably a scarce resident breeder, and since the above it has also been heard 1 km. west of Bayt Baws near Sana'a, Jan-Apr (Martins 1986; MIE). This is the southernmost point of the species' known range.

Strigiformes **Owl sp.**

An owl seen at dusk among dunes and sparsely vegetated coastal flats at Al 'Urj on 26 Oct was probably Short-eared *Asio flammeus* but just possibly Marsh *A. capensis*. There are no other reports of either species from North Yemen, though Short-eared winters at these latitudes across most of Africa (Cramp 1985) and is a passage migrant in Oman (Gallagher & Woodcock 1980). Another unidentified owl was seen between Sana'a and Sa'dah on 14 Nov.

Caprimulgus inornatus **Plain Nightjar**

Not recorded during the Expedition (but see Nightjar sp., below).

This may prove in time to be the identity of many of the nightjars seen in North Yemen, especially in the western ramparts (see below), but the only positive record so far is of a female or immature found dead 13 km. north of Ta'izz (1,200 metres) on 25 Apr 1985 (DDP). The skin is now in the British Museum (Natural History) at Tring and was identifiable by the following points: uniform brownish with fine rufous-buff vermiculations and no obvious dark or whitish markings on throat, wing-coverts or mantle; underparts slightly paler and finely barred; flight-feathers barred rufous-buff, showing no contrast with wing-coverts above or below; crown concolorous with rest of upperparts (no grey or buffish band) with a few fine black flecks. The species has been collected in south-west Saudi Arabia and South Yemen (Meinertzhagen 1954) and is fairly common in Somalia (Ash & Miskell 1983).

Caprimulgus nubicus **Nubian Nightjar**

Three: 2 flushed in daylight near Hodeidah sewage lagoons on 13 Oct; 1 in coastal dunes at Al 'Urj on 26 Oct.

So far identified only Sep-Apr, but probably a not-uncommon (though difficult-to-find) resident breeder in the Tihamah and foothills. Recorded in the following areas: Wadi Kuway (2 calling, one caught, Jan), Al Khawbah (calling, Feb), Nukhaylah (calling, Feb), Jabal Bura' (calling, Feb), Ra's Katanib, Hodeidah sewage lagoons, Wadi Rima 5 km. east of the coast road, Wadi Siham 5 km. west of Al Qutay', and Al Khawkhah (Madge 1981; Cornwallis & Porter 1982; Brockie 1985; Martins 1986; JSA, MIE, RFP, NJR).

Caprimulgus europaeus **Nightjar**

Not recorded during the Expedition.

Probably an uncommon passage migrant, recorded as follows. One near 'Rubu, 15 Aug 1985 (MIE); 7 near Al Midman, 19-20 Sep 1983 (MIE); 1, Sana'a, 15 Oct 1982; 1, Hidhran, 26 Oct 1982; 5, Ibb, 16 Oct 1983 (JK, RFP, NJR); 1 near Al Khawkhah, 12 Apr 1980 (MASB, SCM).

Caprimulgus aegyptius **Egyptian Nightjar**

Not recorded during the Expedition.

The only record is of 2 in dunes at Hodeidah, 30 Dec 1975; call "*chuc-chuc*" (JSA).

Caprimulgus sp. **Nightjar sp.**

The Expedition recorded a further 10 unidentified nightjars – including some rather small ones as follows. Two 14 km. north-east of Ta'izz on 4 Nov, with white primary- and tail-spots.

One at 590 metres on Jabal Bura', 27 Nov, relatively short-winged with longish tail and white primary-spots; call a short liquid "*chwup*".

Other interesting nightjars have been found as follows. 10-12 churring and wing-clapping 14 km. north-east of Ta'izz, May-Jun (DDP). One churring at 1,300 metres in Wadi Siham and another at 600 metres on Jabal Bura', both in Jun (MIE). Birds churring (similar to *C. europaeus* but perhaps quieter and lower pitched) in the Ma'rib area, 21-23 Apr (Martins 1986). As *C. europaeus* is not known to breed south of Asia Minor and Iran (Cramp 1985), these four records (and perhaps the two Expedition records mentioned just above) may well refer to Plain Nightjar (see above), which has a song similar to *C. europaeus* (Archer & Godman 1961). An extremely small nightjar, perhaps Plain or Donaldson-Smith's *C. donaldsoni*, was seen 2 km. north-west of Ta'izz on 12 Apr 1986 (Martins 1986); there are no other reports of the latter, African, species from Arabia. A heavy passage of unidentified nightjars has been reported on the fringe of the Rub' al Khali, east of Ma'rib, in Apr (Martins 1986).

Apus apus **Swift**

98 recorded, 11 Oct-24 Nov, in all areas from the coast to the highlands.

Generally a rather common autumn passage migrant, though numbers are highly variable: often few seen, but large movements occur, e.g. Phillips (1982) saw over 10,000 per day for a week in early Oct on Qu' al Haql in the highlands. Recorded from 6 Jul to mid-Nov (mostly late Jul to Sep), also 3 seen at Ibb on 29 Dec 1983 (MIE, JK, RFP). Only 1 spring record: several over Sana'a on 5 Mar 1970 (Deetjen 1971).

Pallid Swift *A. pallidus* is said to be common on passage in south-west Saudi Arabia (Jennings 1981; Stagg 1984), so its absence from the North Yemen list is not easily explained. It seems either that it is being overlooked, that its migration route lies north of the country, or that the pale *A. apus pekinensis* (which must pass over in large numbers, along with *A. apus apus*) is being misidentified in Saudi Arabia as Pallid Swift.

Apus melba **Alpine Swift**

340 recorded, 280 of these over the Tihamah foothills; only 4 seen over the Tihamah itself (25-26 Nov). Sightings spanned 18 Oct-29 Nov but were sporadic, with two daily counts of 100.

Occurs in moderate numbers in all areas from the coast up to the highlands at 2,800 metres – where it presumably breeds, though the only direct evidence is of pairs in display-flight at Ibb on 16 Mar (Cornwallis & Porter 1982). Apparently present all year in the Ibb-Ta'izz region of the southern uplands (SF, JK, NOSY, DDP), but it may be that most breeders leave the country entirely in winter, for further north around Sana'a the species is scarce or rare in winter, returning mostly in the second half of Mar and leaving again in late Jul; small numbers of apparent migrants then occur in the highlands in Sep (MIE). Generally scarce over the Tihamah, recorded there 20 Oct-29 Nov and 29 Jan-19 Apr, and perhaps occurring only on passage. Phillips (1982) saw up to 2,000 gathering on the coast at Al Luhayyah before flying off south on 20 Oct. The only record east of the highlands is of 10 flying north near Ma'rib on 22 Apr (Martins 1986).

Apus caffer **White-rumped Swift**

Not recorded during the Expedition.

The only record, for North Yemen and Arabia, is of 1 at Bajil on 12 Mar 1982 (Cornwallis & Porter 1982). Breeds as close as north-east Ethiopia.

Apus affinis **Little Swift**

The commonest swift seen: 970, 11 Oct-29 Nov. Widespread over open country from the coast to the mountains at c. 3,000 metres, but occurred mostly over the Tihamah and foothills. The highest daily counts were of 200, on 24 Oct and 13 Nov.

Breeds in the highlands, occurring up to 3,300 metres, but numbers then decline from Jul to Nov, with only four records in Dec-Jan (3 at Ibb, 1 on the Tihamah: JK, RFP). The Sana'a area is re-occupied in mid-Feb (MIE). The many birds seen over the Tihamah seem all to be

moving through: recorded there only Mar to mid-Apr, on 20 Aug and 13 Oct-26 Nov, plus a record of 15 on 10 Jan 1984 (Cornwallis & Porter 1982; Expedition data, MIE, RFP). In 15 minutes on 9 Feb, over 80 flew north at Jabal Bura' (Brockie 1985), and on 20-21 Oct c. 600 moved south at Al Luhayyah (Phillips 1982).

Apus sp. **Swift sp.**

A flock of c. 75 swifts seen at the base of Jibal Milhan near Al Kadan on 13 Nov may have been one of the north-east African species, Nyanza Swift *A. niansae* or Forbes-Watson's Swift *A. berliozi*. Description: all-dark (throat not seen), colour approximately as Swift *A. apus*; wings relatively shorter than *A. apus* and perhaps broader-based, thus less rakish; flight distinctive – mostly gliding, wings held closer to body than *A. apus*; very fast with marked swerving; wing-beats clipped, with marked backward sweep; tail probably similar to *A. apus*.

One similar report from North Yemen: 2 birds, resembling *A. apus* in colour but wings apparently blunter and perhaps shorter/broader-based, at Wadi Warazan on 11 Jan 1986 (MIE). The only relevant reports from elsewhere in Arabia are: breeding colonies of probable Nyanza Swifts in south-west Oman (Bundy 1986b); very dark swifts, perhaps breeding, seen in South Yemen in Jun 1954 (Smith 1956); supposed Plain Swifts *A. unicolor* (a species which breeds only on Madeira and the Canaries) reported, but not accepted, from south-west Saudi Arabia (see Jennings 1981, Stagg 1984).

Cypsiurus parvus **Palm Swift**

364 recorded, all on the Tihamah except for 1 in the lower foothills at 250 metres. Seen over all vegetated habitat-types (including a small park in the centre of Hodeidah) but most frequent in areas with palms near the coast. Peak count of 50 (twice) at Hodeidah sewage lagoons.

A rather common Tihamah resident. No proof of breeding but presumably does so. Phillips (1982) saw c. 10 per day, apparently migrating, at Al Fazzah, 30 Oct-3 Nov. Stagg (1984) records it in south-west Saudi Arabia up to c. 900 metres (the limit of the doum palm *Hyphaene thebaica*) but this does not seem to be the case in North Yemen, perhaps because doum palms there do not seem to grow above the base of the foothills at 250-300 metres. Strangely, Palm Swift was not recorded in North Yemen until 1979 (Cornwallis & Porter 1982) or in Saudi Arabia until 1976 (Jennings 1981); recent range expansion and the overlooking of this distinctive bird seem equally unlikely explanations.

Halcyon leucocephala **Grey-headed Kingfisher**

Eleven recorded, 13-22 Oct. All were on the Tihamah, from Hodeidah beach to the eastern Tihamah. At least 2 were juveniles.

A not uncommon breeding summer visitor, mostly to well-vegetated areas in the foothills from c. 250 to 1,000 metres and (sparsely) up to 2,200 metres in the western ramparts. Also recorded in the eastern flanks (Wadi Attaf, 13 Sep: Phillips 1982) and may be numerous there, as migrants have been seen on the highland plateau apparently on an east-west heading (MIE). More widespread in late summer and autumn, occurring then also on the Tihamah. Earliest record 31 Mar (NOSY), but usually not present until mid or late Apr. Most leave by late Sep (adults going first) and the latest record is 26 Oct (MIE, JK, RFP, NJR).

Merops albicollis **White-throated Bee-eater**

Only one probable record: at least 10, heard only, over the Tihamah east of Hodeidah on 15 Oct.

A summer visitor to the eastern Tihamah, foothills and flat areas in the lower highlands up to c. 1,600 metres; breeds (NOSY). Generally rather common, and highest daily count 61, 11 Jul (MIE). Recorded once in Mar (JF), but not present in strength until mid-Apr; most have left by late Sep, and the latest record is of 20 in Nov (JF).

Merops orientalis **Little Green Bee-eater**

524 recorded, in all types of vegetated but open country at altitudes of up to 1,850 metres – from the coast to the interior at Ma'rib. Seen mostly in single figures but highest daily count 87 with no obvious change in abundance during the Expedition's period in the field.

A common resident in the areas noted above, also higher in summer – up to 2,500 metres (Cornwallis & Porter 1982), perhaps dispersing to still greater altitudes in autumn, as Phillips (1982) found it then at Kawkaban (2,800 metres). Vacates the highland plateau from Oct, withdrawing to below c. 1,600-1,800 metres on the western ramparts and eastern flanks; moves back up in Mar, re-occupying the plateau from Apr (MIE).

Merops superciliosus **Blue-cheeked Bee-eater**

All 78 seen were on the Tihamah, 13 Oct-23 Nov, with all but 5 of these in the period from 2 Nov. Highest daily count 33 on 23 Nov.

Primarily an uncommon migrant, seen so far in autumn only. Further records as follows: 33, 18 Aug 1982, foothills; 27, 26 Aug 1985, 1,400 metres; 8, 5 Sep 1984, foothills (MIE); 2, 7 Sep 1979, highlands (Phillips 1982); 83, 20-22 Oct 1982, Tihamah (RFP, NJR); 1, 19 Nov 1982, seen between Ta'izz and Bayt al Faqih (JK). Also 10 or more at Hodeidah on 31 Dec 1975 (JSA) and 4 there in Dec 1984 (JF). Passage migrants must be of the Asiatic race *persicus*, but the first group of Dec birds were of the nominate East African race suggesting a few of these may move north to winter in south-west Arabia.

Merops apiaster **Bee-eater**

All 190 were seen on the Tihamah, 14 Oct-13 Nov, with all but 3 of these in the period up to 27 Oct. Highest daily count 55.

A common autumn passage migrant, but uncommon in spring. Extreme spring dates are 17 Mar-19 Apr, and for autumn 27 Jul-13 Nov, though most pass from mid-Aug to late Oct. The highest count is of 1,200 over Sana'a on 15 Sep (J. Hickerton), but few records are of more than 100. Occurs over all habitats from coast to mountains.

Coracias garrulus **Roller**

One, 15 Oct, on the Tihamah south-east of Hodeidah.

A scarce passage migrant, with other records as follows: 1 on the Tihamah, 14 Apr 1980 (MASB, SCM); 4 between Hodeidah and Al Kadan, 17 Apr 1979 (Cornwallis & Porter 1982); 1, 11 Aug 1983, Haddah; 1, 5 Sep 1984, Jibal Raymah; 1, 9 Sep 1984, Risabah (MIE); 2, 22 Sep 1979, near Ibb; 1, 3 Oct 1979, near Dhamar (Phillips 1982); 5, Al Kadan, Oct 1984 (JF). Few are seen also in south-west Saudi Arabia (Stagg 1984).

Coracias abyssinicus **Abyssinian Roller**

93 recorded, all in areas of the central and eastern Tihamah with trees or tall, shrubby vegetation. Generally seen singly, but pairs were present in Nov and courtship display was seen on 28th; highest daily count 22.

A not uncommon resident breeder. Usually restricted to the areas noted above, though a few occur near the coast and up to 850 metres in the foothills (Sclater 1917; Cornwallis & Porter 1982; MIE). Has been seen higher still in autumn and winter: at Hidhran (1,000 metres, 26-27 Oct: RFP, NJR) and at Ibb (2,000 metres, 9 Dec: JK).

Upupa epops **Hoopoe**

47 recorded, 9 Oct-2 Dec, from the Tihamah to the highlands and in the interior at Ma'rib (2 birds, 2 Dec).

A rather common breeder in the highlands from 1,450 to 3,650 metres (including eastern flanks), but mostly found below these altitudes from Oct to mid-Feb, when also less common (MIE, JK). However, present all year in the southern highlands around Ta'izz (NOSY, DDP). Recorded in the Tihamah from Aug to Apr (JF), some (at least) of these presumably being immigrants or passage migrants. Many breeders probably winter in Africa.

Tockus nasutus **Grey Hornbill**

137 recorded, mostly in well-vegetated areas of the foothills (up to 850 metres) or on just-adjacent parts of the Tihamah with trees. Also 1 at Ibb (1,850 metres) on 21 Nov and 5 in the central Tihamah (near Al Mansuriyah and north of Wadi Mawr) on 23-26 Nov. Highest daily count 31, on Jabal Bura' above 590 metres. Often seen in groups, and on 28 Nov one male from a flock of 12 displayed in a tree as follows: bill open and pointed straight up, wings half spread and flapping, and tail flicking half-open; calling accelerated from a slow ". . . *toc-toc-toc* . . ." through ". . . *tee-tee-tee* . . ." to a louder, more excited ". . . *klee-klee-klee* . . ." *and an ecstatic* ". . . *klee-yoo klee-yoo klee-yoo* . . ."; then posture relaxed and calling slowed to a stop.

A not-uncommon breeding resident in the foothills, as noted above, and also at scattered sites in well-vegetated wadis up to 1,500 metres, occasionally to 1,900 metres (MIE). Recorded on the central Tihamah only outside the breeding season (from 19 Sep: MIE), usually in wadi-bed *Acacia* thickets.

Jynx torquilla **Wryneck**

Two near Al Kadan on 24 Oct, 1 above Shibam on 7 Nov.

A scarce passage migrant (spring and autumn) and winter visitor, with further records (of single birds) as follows: 1 Mar 1970, near Ta'izz (Deetjen 1971); 12 Mar 1982, Bajil (Cornwallis & Porter 1982); 25 Mar 1983, Ibb (JK); Sep 1983, Sana'a (J. Hickerton); 21 Dec 1983, Risabah (JK); 25 Jan 1985, Wadi Duba above Dhi Sufal (NOSY, DDP). Winters at these latitudes all across Africa (Cramp 1985).

Dendrocopos dorae **Arabian Woodpecker**

21 recorded, in areas with trees (especially acacias), mostly in the highlands. Seen as follows: 1, Sana (2,300 metres, near Haddah); up to 10, near Al Mahwit (1,600-1,850 metres); 1, south-west of Ma'bar (2,100 metres); 4, south-west of the Sumarah pass (2,130 metres); 1, Jabal Bura'. For details of this species, see Everett (1987a).

A widely distributed but uncommon resident in the western ramparts and highlands, from c. 1,000 to 2,800 metres (MIE), occasionally lower in the Tihamah foothills.

Mirafra cantillans **Singing Bush Lark**

131 recorded on the eastern Tihamah (100-200 metres), all in agricultural areas, the largest concentration being 40 near Al Qutay', 22 Oct; no flocks seen. Most birds were singing males; a recently-fledged juvenile on 18 Oct.

A locally common resident of cultivated areas (millet/sorghum) on the Tihamah (especially the eastern side), occurring more sparsely in the Tihamah foothills and Ta'izz region (up to 1,300 metres).

Eremopterix nigriceps **Black-crowned Finch Lark**

1,792 recorded, mostly on the Tihamah where widespread, but also 1 near Ma'rib on 2 Dec and 1 at Sana'a airport (2,200 metres) on 4 Dec. No large flocks seen, the largest concentration being 67 east of Al Qutay', 22 Oct. Most birds were breeding, with singing males and pairs seen throughout Oct and Nov, courtship on 15 Oct, and nests with pulli found on 22 Oct and 24 Nov; breeds in areas of recent rainfall.

A very common breeder on the Tihamah from the coast to the foothills and also less commonly in the interior desert (up to 1,200 metres). Also recorded in flattish, open, scrubby areas of the western ramparts, highlands (up to 2,200 metres) and eastern flanks on 15 Mar, 2 Apr, 5-18 Sep and 4 Dec (Cornwallis & Porter 1982; Phillips 1982; MIE, Expedition data, DDP). These six records may refer to migrants to and from the higher latitudes in Arabia, where the species is mostly absent in winter between Oct and Mar/Apr (Jennings 1980, 1981; Morgan & Palfery 1986). 40 flying north near Bajil on 12 Mar may have been migrants (Cornwallis & Porter 1982). Non-breeding birds form small parties or flocks, usually of less than 30, but up to 120 (MIE).

Eremalauda dunni **Dunn's Lark**

One on a flat, stony area at base of hills near Ma'rib dam, 2 Dec.

No other records, but presumably a visitor or resident in the interior desert. A specimen collected "just east of Mushainiqa" (thus in North Yemen) in Aug (Bates 1938) was actually collected at Umm al Samr (details from BM(NH) specimen label *per* F. E. Warr) which is a plain (properly called Umm as Samar: see Philby 1939) in South Yemen.

Ammomanes cincturus **Bar-tailed Desert Lark**

Not recorded during the Expedition.

Presumably a visitor or resident in the interior desert though the only record is of 1 near Mataww on 3 Aug 1936 (Bates 1937a, 1938). No records from the Tihamah.

Ammomanes deserti **Desert Lark**

139 recorded from 300 to 2,600 metres, mostly in the highlands (including Sa'dah region) and interior desert, with small numbers on the stony fringe of the southern Tihamah. No flocks seen although there was a large concentration of 45 in the Ma'rib dam area on 2 Dec. Pairs seen Nov-Dec, and song and courtship in mid-Nov.

A locally common resident of stony habitats from the lowest Tihamah foothills to the highlands (up to 2,800 metres) to the interior desert (down to 1,000 metres at least).

Alaemon alaudipes **Hoopoe Lark**

A bird of the coast and western Tihamah only, 53 being recorded (up to 120 metres). Paired and song heard in mid-Oct.

A common resident of flat, sandy, tree-less wastes and sabkhah along the coast and more locally elsewhere on the western half of the Tihamah (up to 180 metres); also in the interior desert.

Melanocorypha bimaculata **Bimaculated Lark**

Two at Ta'izz sewage lagoons on 19 Nov, feeding on the silty margin of a pool.

No other records, though it has straggled to South Yemen (Guichard & Goodwin 1952; Meinertzhagen 1954).

Calandrella cinerea **Red-capped Lark**

18 at three sites in the highlands, all on the Sana'a-Shibam road (2,500 metres). No sign of breeding.

A fairly common resident of highland plains, plateaux, terraces and limestone pavement from 2,000 to 3,400 metres, though not recorded above 3,000 metres in winter. Flocks of up to 130 recorded Jul-Mar (Cornwallis & Porter 1982; MIE).

Calandrella brachydactyla **Short-toed Lark**

835 recorded, 14 Oct-26 Nov, all on the Tihamah save a flock near Ta'izz and a flock on the highland plain near Sana'a. Several concentrations of over 100 birds recorded, the largest being 260 north of Wadi Mawr on 26 Nov and 193 around Al Mansuriyah on 24 Nov. The largest single flock was of 115 west of Al Kadan on 28 Oct.

A common autumn passage migrant on the Tihamah, less common on the highland plains. Extreme dates are early Sep to 26 Nov; peak passage in Nov. Scarce in winter and spring, the only records being at least 100 near Ta'izz sewage lagoons on 18 Jan (DDP), 2 at Bajil on 12 Mar and 1 near Ibb on 17 Mar (Cornwallis & Porter 1982) and 2 near Sana'a on 31 Mar (J. Hollingworth).

Galerida cristata **Crested Lark**

533 seen, in nearly all areas visited from the coast to interior desert (including Sa'dah region), up to 2,800 metres. The largest concentration was a flock of 70 near Ma'rib. 2 Dec. Song heard in Oct, Nov and Dec; pairs and courtship display in Oct and Nov.

A common resident throughout most of the country (up to 3,200 metres) including the interior desert fringes, only absent from bleak, barren areas such as unvegetated sabkhah, high mountain-tops and pure desert.

Riparia riparia **Sand Martin**

356 recorded, 13 Oct-23 Nov, mainly on the coast and agricultural Tihamah, though seen in the Tihamah foothills and up to 1,100 metres in the Ta'izz area as well; the largest group numbered 200 at Ar Ru'ays, 3 Nov.

A passage migrant and rare winter visitor, concentrating around green or wetland sites. Locally common on autumn passage, extreme dates 6 Sep-23 Nov; peak passage in Oct. One winter record: 8 at Al Fazzah on 19 Jan (Brockie 1985). Scarcer on spring passage (*contra* Meinertzhagen 1954): recorded 5-29 Apr, from coast to interior desert, and also a record of many at Hodeidah sewage lagoons in Jun (JF), presumed to be late migrants or non-breeders.

Riparia cincta **Banded Martin**

Not recorded during the Expedition.

One at Bajil on 12 Mar 1982 (Cornwallis & Porter 1982) is the only confirmed Arabian record of this widespread African resident and local migrant, which breeds as close as northern Ethiopia.

Ptyonoprogne fuligula **African Rock Martin**

260 recorded: in the Tihamah foothills, western ramparts, highlands (including Sa'dah area) and interior desert, almost always near cliffs, between 300 and 3,600 metres, excepting 2 on the southern Tihamah on 22 Nov, perhaps migrants or winter wanderers. Most were singles, the largest concentrations being 35 at Ma'rib dam on 2 Dec and a tight flock of 30 at Kawkaban/Shibam on 6 Nov. Used nests found in Oct; song heard in Nov.

A common resident from the Tihamah foothills to the interior desert hills (300-3,600-1,100 metres), wherever there are cliffs. In winter some leave inhospitable high-mountain and desert breeding sites, and concentrations form in wetland or green areas.

Ptyonoprogne rupestris **Crag Martin**

26 at three sites: 20 at Ar Ru'ays mangroves, 3 Nov; 2 at Hidhran marsh (1,000 metres), 4 Nov; 4 in the Mafraq al Mukha area (350 metres), 4 Nov. A number of the 17 unidentified *Ptyonoprogne* could have been this species.

The only other certain records are of 3 on the Tihamah on 22 Oct 1982 (RFP, NJR), 3 collected at Manakhah on 12, 27 and 30 Dec 1912 (Sclater 1917; F. E. Warr *pers. comm.*) and 6 in Wadi Surdud on 15 Feb 1982 (Brockie 1985). Although status has been confused in the past by identification difficulties between this and previous species, Crag Martin appears to be a scarce autumn passage migrant and winter visitor, and there is no evidence for breeding.

Hirundo rustica **Swallow**

3,415 recorded, 9 Oct-3 Dec, the largest concentration being 800 over crops near Al Qutay' on 22 Oct. Found most commonly on the Tihamah and coast, with smaller numbers on the ramparts and in the highlands and interior desert, up to 3,000 metres.

Recorded in all months. A very common and widespread passage migrant, commoner in autumn (Jul-Nov) than in spring (Feb-May), *contra* Meinertzhagen (1954); peak passage during Sep-Oct and Mar-Apr. Smaller numbers overwinter locally on the Tihamah and in the southern uplands; recorded once in Jun (MIE).

Hirundo daurica **Red-rumped Swallow**

22 recorded, 11 Oct-28 Nov, at eleven sites between the coast and highlands (including Sa'dah region) up to 2,800 metres. The largest group numbered 5. Recently used nests found in Oct.

A migrant breeder, passage migrant and winter visitor, occurring throughout the country.

The breeding population arrives from Africa in Feb and Mar, often associated with the arrival of Alpine and Little Swifts, and is common and widespread throughout the Tihamah foothills, western ramparts and highlands (200-3,300 metres) during summer; breeding sites nearly all vacated by the beginning of Oct. Migrants are common throughout the country in Feb-Apr and Jul-Oct; peak passage seems to be Mar-Apr and Aug-Sep. Small numbers (of unknown provenance) overwinter locally in the well-vegetated areas of the southern uplands.

Delichon urbica **House Martin**

Six birds on three sites: 2 east of Hodeidah, 14 Oct; 3 at Ar Ru'ays, 3 Nov; 1 at the Sumarah pass, 5 Nov.

An uncommon autumn migrant and rare spring migrant and winter visitor, mostly in the highlands above 2,000 metres, though also encountered down to the coast. Recorded 28 Aug-5 Nov in autumn (with passage peaking conspicuously in Sep: MIE), once in winter (1 at Ibb on 28 Dec: RFP) and once in spring (6 at Wadi Dahr on 10 Apr: Cornwallis & Porter 1982).

Anthus novaeseelandiae **Richard's Pipit**

Four seen: a pair and a single at a site (1,850 metres) between At Tawilah and Al Mahwit on 10 Nov and 1 on Kawkaban plateau (3,000 metres) on 3 Dec.

An uncommon and local resident of the plains and terraces of the western ramparts and western highland fringe (600-3,000 metres); breeding confirmed (DDP). Usually in areas of sorghum/millet cultivation or in marshes or other places that simulate its grassland habitat (though no records from the Tihamah).

Anthus campestris **Tawny Pipit**

192 recorded, 14 Oct-2 Dec, the largest count being 35 around Al Mansuriyah on 24 Nov. The great majority were found on the Tihamah (up to 350 metres), singly or in pairs, the exceptions being 1 at Ta'izz sewage lagoons, 1 between Sana'a and Shibam, 7 at Sa'dah and 5 at Ma'rib.

A common passage migrant throughout and a fairly common winter visitor to the Tihamah, mountain plains (up to 2,400 metres) and the interior desert fringe. Extreme dates 2 Aug-13 Apr; passage peaks in Sep and perhaps Mar.

Anthus similis **Long-billed Pipit**

29 recorded in the western ramparts and highlands (1,100-2,800 metres). Usually found singly or (in Oct-Nov) in pairs; song heard in Nov.

A fairly common and widespread resident of the western ramparts and highlands (600-3,000 metres), typically on or near stony, grassy hillsides. Recorded at lower altitudes in Jan-Feb, from the coast to the Tihamah foothills (Brockie 1985), indicating that downward altitudinal movements can occur in late winter, though some birds remain even at the highest levels during these months (MIE).

Anthus trivialis **Tree Pipit**

85 recorded, 13 Oct-24 Nov, mostly on the Tihamah, all below 1,900 metres save 1 at the Sumarah pass (2,800 metres) on 17 Nov. None seen in the interior desert areas.

A widespread passage migrant and a more local winter visitor. In autumn commonly encountered in small numbers from the coast up to 2,900 metres in the highlands, while in winter it is confined mostly to wooded areas in the western ramparts (up to 2,000 metres), with 2 records from the Tihamah (Brockie 1985; RFP). Spring passage is smaller than autumn. Extreme dates 17 Aug-21 May; passage peaks in Sep.

Anthus cervinus **Red-throated Pipit**

27 recorded at five wetland sites (up to 1,100 metres): 3 at Ta'izz sewage lagoons on 31 Oct and 14 on 19 Nov; 5 at Ta'izz dam on 31 Oct; 2 at Hidhran on 4 Nov; 1 at Al Fazzah grass-flats on 22 Nov; 1 at Hodeidah sewage lagoons on 17 Oct and 23 Nov.

A scarce and localised passage migrant and winter visitor from coast to highlands (up to 2,000 metres in winter: JK). Seems to be more common on spring than autumn passage. Extreme dates 5 Oct-25 Apr; peak passage in Oct and Apr.

Motacilla flava **Yellow Wagtail**

727 recorded, 10 Oct-28 Nov, from coast to highlands (up to 2,300 metres), the largest concentration being 225 near Al Kadan on 21 Oct. The great majority occurred on the Tihamah, with smaller numbers in the southern uplands and 1 record from Sana'a (5 on 10 Oct).

A widespread passage migrant from coast to highlands (up to 2,700 metres) and a more local winter visitor. Very common on autumn passage but less common in spring. Extreme dates 14 Jul-25 Apr; peak migration in Sep and Mar/Apr. Winters fairly commonly on the Tihamah, less commonly in the southern uplands and highlands (up to 2,400 metres), in moist or cultivated areas. The races *lutea*, *thunbergi*, *beema*, *flava* and *feldegg* have been recorded, *feldegg* being the one most frequently identified and apparently the only one to overwinter.

Motacilla citreola **Citrine Wagtail**

Nine recorded at three wetland sites: at Ta'izz dam, 3 on 31 Oct and 4 on 19 Nov; 1 at Hidhran marsh on 4 Nov; 1 at a small marsh near Al Qutay' on 27 Nov.

The only other records are of 1 at Ibb on 28-29 Dec 1983 (RFP, JK), 1 near Wadi Warazan on 8 Feb 1985 (DDP) and a male in breeding plumage (showing characteristics of race *citreola*) at Ta'izz reservoir on 14 Feb 1986 (MIE). This Asiatic species seems to be a scarce and local winter visitor to wet, marshy habitats, up to 2,000 metres.

Motacilla cinerea **Grey Wagtail**

Recorded from the coast up to 2,900 metres in the highlands, but not from the Sa'dah or Ma'rib regions; of the 86 seen, 11 Oct-3 Dec, all but 3 were near fresh water (the 3 were on the Tihamah). The largest concentration was 17 going to roost at Sana'a, 29 Oct.

A fairly common passage migrant and winter visitor, regularly encountered near fresh water sources such as wadi streams, cisterns and pools, thus mostly found in the mountains (though 75-100 roosting with 225-300 White Wagtails on the coast, 5 Jan: DDP). On migration may be seen away from fresh water (up to 2,900 metres). Extreme dates 15 Aug-10 Apr; passage seems much greater in autumn compared to spring. Wintering population leaves in Feb (MIE, NOSY). Scarcer but more widespread than White Wagtail.

Motacilla alba **White Wagtail**

383 recorded, in most regions from the coast up to 2,800 metres in the highlands and in the Ma'rib area, notable concentrations (not roosts) being 123 at Sa'dah on 16 Nov and 100 at Ta'izz sewage lagoons on 19 Nov. Seen from 13 Oct to 3 Dec.

A locally common winter visitor and presumed passage migrant from the coast to the highlands (up to 2,800 metres) to the interior desert fringe. Most abundant around human habitations and rubbish dumps but also found in wet areas such as wadis, marshes, pools and irrigated cultivation. Extreme dates 13 Sep-14 Apr; main arrival of wintering birds in Oct, main departure in Feb/Mar (MIE, NOSY). Passage occurs in spring (Mar-Apr) but is not noticeable in autumn.

Pycnonotus xanthopygos **Yellow-vented Bulbul**

Found in most habitats visited from the coast to the interior desert fringe, up to 2,800 metres. 2,070 recorded, the largest concentrations being 240 at Jabal Bura' on 28 Nov and 54 along 100 metres of Wadi Rasyan on 4 Nov. Pairs seen throughout the period.

A very common and widespread resident wherever there is scrub or trees, up to 3,200 metres.

Hypocolius ampelinus **Grey Hypocolius**

One on the Tihamah in a wadi 4 km. north of Suq 'Abs, 25 Nov.

No other records, and apparently none from adjacent regions of the Asir in Saudi Arabia, the North Yemen record being c. 500 km. south of the species' regular wintering range (see Jennings 1981); however there is at least one sight record from further south, in South Yemen (Meinertzhagen 1954).

Prunella fagani **Arabian Accentor**

A minimum of 27 birds at three sites in the central and southern highlands: Kawkaban area (2,800-3,000 metres) – at least 13 individuals, 11 Oct-3 Dec; Sumarah pass (2,800 metres) – at least 13 individuals, 20 Oct-17 Nov; escarpment slope 10 km. west of Ibb (2,000 metres) – 1 on 21 Nov. For details of this species, see Redman (1987).

Endemic to the Yemeni mountains. A very localised breeding resident of grassy, bushy mountain slopes in the western ramparts and highlands (2,000-3,000 metres).

Cercotrichas galactotes **Rufous Bush Chat**

Twelve recorded, 18 Oct-25 Nov (9 in Oct, 3 in Nov), at eight sites on the Tihamah and one site in the foothills (Jabal Bura').

A passage migrant, common and widespread in autumn but seemingly less so in spring, occurring in all regions (up to 2,400 metres) from coast to interior desert fringe. Recorded only 30 Mar-16 May and 7 Aug-25 Nov, with peak migration in Apr and Aug/Sep; thus Meinertzhagen's (1954) suggestion that it almost certainly winters in southern Arabia is unlikely to be correct.

Cercotrichas podobe **Black Bush Robin**

193 recorded from the Tihamah, foothills and southern uplands (up to 1,400 metres), the largest single concentration being 22 in a wadi 4 km. north of Suq 'Abs on 25 Nov. No sign of breeding, though song heard throughout the period, and some birds appeared to be paired.

A fairly common and widespread breeding resident from the coast up to 1,600 metres in the western ramparts, in areas of bush or scrub with occasional trees; recently recorded from the interior desert fringe in spring (RPM). The upper altitudinal limit of breeding birds in south-west Saudi Arabia (c. 1,500 metres: Stagg 1984) matches that found in North Yemen, thus several records from the highlands (at 2,200-2,400 metres) in Mar, Apr and Aug (Deetjen 1971; J. M. Evans, MIE, R. Murtland) perhaps refer to dispersers/migrants rather than breeders. Birds showing characteristics of the nominate African race have been seen in Mar and Sep, and also in Oct in South Yemen (Sclater 1917; MIE); in Somalia this race is only recorded Nov-Mar (Ash & Miskell 1983).

Luscinia luscinia **Thrush Nightingale**

One bathing at a pool east of Al Qutay' on 18 Oct.

A passage migrant, apparently (formerly?) very common on the coast in spring, but rare in autumn from the coast to the highlands. Meinertzhagen (1954) includes a report indicating massive spring passage through Kamaran island, thousands being recorded each year before 1950, "only several hundred" in 1950 and 1951; one shot on 12 May 1949 had been ringed as a nestling in southern Sweden. These observations have not been confirmed since, and no other spring records are known. The only other autumn records are of singles: in Sana'a on 10 Aug 1983 and 25 Sep 1985 (MIE), near Ta'izz sewage lagoons in Sep/Oct 1984 (SF) and at Hodeidah on 7 Oct 1913 (Sclater 1917).

Luscinia megarhynchos **Nightingale**

Not recorded during the Expedition.

A passage migrant only, rare in spring (3 records: Sclater 1917; Martins 1986; R. Self) but fairly common in autumn, from the eastern Tihamah to the interior desert fringe; most common in the higher regions (up to 2,400 metres). Extreme passage dates 5-24 Apr and 26 Aug-26

Oct, peak in Sep. Prefers thick, luxuriant scrub for cover and usually found in local concentrations in wet/humid areas of the foothills and western ramparts.

Luscinia svecica **Bluethroat**

One at Hidhran marsh on 4 Nov and 1 at Ma'rib dam on 2 Dec.

A scarce and localised winter visitor to moist areas such as lush cornfields, wet wadis and *Typha* beds (1,000-2,000 metres). The only other records are of 1 at Ibb on 18 Sep 1983 (MIE), 1 there from 10 Dec 1983 to 8 Feb 1984 (JK, RFP), 2 holding territories at Ta'izz reservoir on 9 Jan 1986 (MIE, SF), 1 in Wadi Duba on 25 Jan 1985 (NOSY) and 1 at Ta'izz on 8 Feb 1963 (Montfort 1965).

Irania gutturalis **White-throated Robin**

A male at 1,850 metres between At Tawilah and Al Mahwit, 10 Nov.

A locally common autumn passage migrant, less common in spring, from coast to highlands (up to 2,700 metres); may winter occasionally. Extreme passage dates 10-19 Apr and Jul-15 Sep; southward passage mainly in Aug. The sole Jul record (undated) was from Ibb (NOSY). Records of birds probably wintering come from well-vegetated areas (300-2,400 metres): 1 at Haddah on 2 Nov (Phillips 1982), the Expedition record and 2 at Jabal Bura' on 7 Feb (Brockie 1985). Usually found in thorn scrub and thicket on migration.

Phoenicurus ochruros **Black Redstart**

57 recorded, 28 Oct-3 Dec, mostly in the highlands at 1,800-3,000 metres (including Sa'dah region), but also 2 in the southern uplands (1,000 metres) and 1 in the Tihamah foothills (300 metres) near As Sukhnah. Birds take up winter feeding territories and defend them.

A widespread winter visitor to the highlands, common at 1,300-3,700 metres; scarcer at lower altitudes of the western ramparts and down to 300 metres in the Tihamah foothills. Extreme dates 28 Sep-15 Apr; main arrival second half Oct, main departure second half Feb; records in Mar and once in Apr (Cornwallis & Porter 1982; DDP) probably refer to passage migrants. Commoner than Redstart in winter (MIE).

Phoenicurus phoenicurus **Redstart**

70 between 19 Oct and 30 Nov, recorded evenly from the Tihamah to the highlands, including the Sa'dah region (100-2,900 metres).

A fairly common migrant from the coast to the highlands (up to 2,900 metres) to the interior desert fringe (seemingly more common at higher altitudes) and a winter visitor in small numbers to the western ramparts and highlands (600-2,800 metres), mostly race *samamisicus*. Seen once on the Tihamah in winter: 1 (nominate race), Wadi Zabid, 18 Jan (Brockie 1985). Winterers seem to depart by the first week of Mar (Deetjen 1971; MIE). Extreme dates 31 Aug-8 May; peak migration in Sep and Mar.

Cercomela melanura **Blackstart**

318 recorded, from the eastern Tihamah up to 1,900 metres in the western ramparts and northern highlands, and from the interior desert fringe, with only 3 records above 1,900 metres: 1 west of Ma'bar (2,100 metres), 3 at Jabal Umm Laylah (2,400 metres) and 1 at Kawkaban (2,800 metres). The largest counts were 35 in a wadi 4 km. north of Suq 'Abs, 25 at a site near Al Kadan and 25 at Ma'rib dam. Pairs seen throughout the period, territorial defence noted in Oct, and song heard Oct-Nov.

A resident of the Tihamah foothills, western ramparts (250-2,000 metres; race *erlangeri*), eastern flanks and interior desert fringe (1,100-1,900 metres; nominate race: MIE), in dry acacia scrub and bushland, reaching up to 2,400 metres in the drier (northern) areas of the highlands (race unknown). Unusually high records (e.g. Expedition data) perhaps refer to wandering non-breeders; the acacia-lined wadis of the eastern Tihamah seem to be occupied only in winter (Cornwallis & Porter 1982; MIE, Expedition data). The two races are mostly separated by the denuded plains and mountains of the highlands, but may meet or come

closest in the lower country of the south where the western ramparts and eastern flanks merge (e.g. somewhere between Ibb and Qa'tabah): there is evidence that the species may span this area (JK), and the situation deserves further investigation (see Bundy 1986b).

Saxicola rubetra **Whinchat**

Single birds recorded at three sites below 1,400 metres: near Al Qutay' on 22 Oct, near Ta'izz on 4 Nov and at Hidhran marsh on 18 Nov.

A rather uncommon passage migrant and winter visitor, occurring on migration from the coast to the highlands (up to 2,800 metres) and commoner in spring; appears to winter sparsely in the Tihamah foothills and western ramparts (up to 2,000 metres). Extreme dates 18 Sep-17 Apr (but no records from Dec); peak passage in Feb/Mar.

Saxicola torquata **Stonechat**

128 recorded, including at least 23 of the migrant Palaearctic races. The resident race *felix* occurred mostly in the western ramparts and highlands (but not in Sa'dah area), from 1,100 to 3,000 metres. Palaearctic birds were found on the Tihamah and in the southern uplands (up to 1,100 metres), 15 Oct-25 Nov. Residents usually in pairs and song heard in Nov.

The race *felix* is a fairly common but local breeding resident in green/wet places between 1,600 and 3,000 metres in the western ramparts and western fringe of the highlands. Some downward movement (to 1,100 metres) occurs in winter (Expedition data). No records south of Jabal Sabir (Meinertzhagen 1954; JK). Palaearctic races are seen regularly on autumn passage from the coast to 2,400 metres in the highlands, with birds wintering locally in green areas on the Tihamah and in the western ramparts up to 1,700 metres. The races *armenica, variegata* and possibly *maura* have been recorded (Sclater 1917; Meinertzhagen 1954). Extreme dates 5 Sep-4 Mar; peak passage in Sep/Oct, spring passage apparently small or non-existent. Winterers leave in Feb/Mar (Montfort 1965; DDP).

Oenanthe isabellina **Isabelline Wheatear**

372 recorded, 14 Oct-29 Nov, commonly on the Tihamah and in the southern uplands, less commonly on the highland plains (including Sa'dah area) up to 2,500 metres. Much aggressive territorial behaviour noted in Oct and subsong throughout the period, obviously concerned with the setting up of winter territories.

A common and widespread autumn passage migrant (rather uncommon in spring) and fairly common winter visitor, occurring from coast to highlands, with one record from the interior desert fringe (in spring: RPM). Uncommon above 1,400 metres in winter,though recorded up to 2,700 metres (MIE, NOSY, RFP). Extreme dates 27 Aug-22 Apr, peak passage in Sep and Mar. Most wintering birds leave in Feb (MIE, NOSY).

Oenanthe bottae **Red-breasted Wheatear**

134 recorded, exclusively in the highlands (including Sa'dah area) and southern uplands, at 1,400-3,400 metres, with the exception of 2 on the Tihamah 27 km. north of Suq 'Abs (at 190 metres) on 26 Nov. Pairs seen throughout the period.

A common resident of flat, open areas in the southern uplands and highlands (1,400-3,000 metres; less common below 2,000 metres), dispersing in winter down to the eastern fringe of the Tihamah (Expedition data, JK, DDP) and up to 3,600 metres on mountainside terraces (MIE, Expedition data).

Oenanthe oenanthe **Wheatear**

18 recorded, 13-26 Nov, all on the Tihamah apart from 5 at Ta'izz sewage lagoons on 19 Nov. The lack of Oct records is notable.

A rather uncommon passage migrant throughout North Yemen from coast to highlands (up to 2,800 metres), and a rare winter visitor. Extreme dates 4 Sep-26 Nov and 22 Mar-17 Apr; peak autumn passage in Sep/Oct; seems commoner in autumn. Certainly not common in winter as stated by Sclater (1917): some of the Expedition birds may have been wintering, otherwise 1 at Ibb on 8 Feb (JK) is the only record.

Oenanthe pleschanka **Pied Wheatear**

63 recorded, 14 Oct-2 Dec, widely spread below 2,500 metres from the coast to the interior desert fringe.

A fairly common passage migrant and winter visitor throughout the country, widely distributed in small numbers. Winters as high as 3,400 metres (MIE). Extreme dates 6 Sep-16 Apr; peak passage in Oct and Mar.

Oenanthe hispanica **Black-eared Wheatear**

Not recorded during the Expedition.

A rare autumn passage migrant and winter visitor. There are 4 autumn records from the highlands above 1,000 metres and 1 winter record from the Tihamah: 1 on Jibal Raymah on 6 Sep 1984 (MIE), 3 in Wadi Jadr al Hadd on 7 Sep 1979 (Phillips 1982), 2 near At Turbah on 27 Sep 1984 (MIE), 2 at Bayt Baws on 28 Sep 1984 (S. Fenwick) and 1 (trapped) in Wadi Zabid (c. 300 metres) on 17 Jan 1982 (Brockie 1985).

Oenanthe deserti **Desert Wheatear**

20 recorded in three areas from 13 Oct onwards: 15 on the coast/western Tihamah, 2 near Shibam (2,700 metres, 3 Dec) and 3 near Ma'rib dam.

An uncommon but widespread winter visitor and passage migrant, occurring in small numbers on the Tihamah (especially the more arid western half), highland plains (up to 2,700 metres) and interior desert. Extreme dates 7 Sep-7 Apr; main arrival in Oct, main departure in Feb.

Oenanthe moesta **Red-rumped Wheatear**

Not recorded during the Expedition.

The only record (not fully substantiated) is of 2 immatures/females near Raydah on 15 Sep 1979 (Phillips 1982).

Oenanthe xanthoprymna **Red-tailed Wheatear**

Two near Ma'rib on 2 Dec: 1 at the new dam and 1 at the Temple of Bilqis; one and probably both, were *O. x. chrysopygia*.

Probably a regular winter visitor to the interior desert foothills and perhaps elsewhere. The type specimen of the race *chrysopygia* was probably collected between Hodeidah and Ta'izz (Bates 1937b); the only other record is of 1 (*chrysopygia*) in desert foothills near Wadi Raghwan on 2 Sep 1983 (MIE).

Oenanthe lugens persica **Mourning Wheatear**

Not recorded during the Expedition.

There is only one record of a Palaearctic-race bird: 1 (probably *persica*) near Kawkaban on 8 Mar 1982 (Cornwallis & Porter 1982).

Oenanthe lugens lugentoides **South Arabian Wheatear**

251 recorded in the highlands (including Sa'dah region) from 3,500 metres down to 1,100 metres on the western ramparts and eastern flanks. For details of this species, see Evans *et al.* (1987).

A common and widespread resident of stony hillsides and cliffs of the western ramparts, highlands and eastern flanks (1,000-3,500 metres).

Oenanthe monacha **Hooded Wheatear**

Not recorded during the Expedition.

Presumably a resident breeder in ravines and rocky wadis east of the highlands. The only records are from the eastern flanks and interior desert north and east of Wadi Jawf (1,100-2,100 metres): 1 at Abu Ka'b on 4 Aug, 1 at Wadi Wasat on 6 Oct, 1 at Wadi Khabb on 8 Oct and 1 at Wadi Sayh on 9 Oct 1936 (Bates 1937a); 2 at Dhi Bin on 28 Sep 1982 (JK).

A specimen collected at Al Hajjaylah (c. 600 metres) in the western ramparts on 14 Mar 1913, initially identified as South Arabian Wheatear *Oenanthe lugens lugentoides* (Sclater 1917), was re-identified as Hooded Wheatear (Bates 1937a), although the specimen at the British Museum (Natural History) cannot yet be traced for final confirmation (F. E. Warr *pers. comm.*). This spring record from atypically 'green' habitat is paralleled by a more recent unexpected spring record from Djibouti (Welch & Welch 1984), suggesting that the species may undertake movements of some kind.

Oenanthe leucopyga **White-crowned Black Wheatear**

Not recorded during the Expedition.

Presumably a resident breeder in the interior desert foothills. There are only 3 records: 1 in the May'ayn hills on 28 Jul 1936 (Bates 1937a), 2 at bases of small, volcanic cones in a lava field (1,500 metres) c. 20 km. north-west of Ma'rib on 9 Aug 1985 (MIE) and 1 at Naqil Yislah on 28 Dec 1975 (JSA). The last-mentioned record, from the highlands and not in typical breeding habitat, suggests that winter visitors from further north may occur, as they do in northern Saudi Arabia (Stagg & Walker 1982).

Monticola rufocinerea **Little Rock Thrush**

83 recorded, in the western ramparts and highlands (though not in the Sa'dah region), at 600-2,800 metres. Pairs seen in Oct and Nov, and song and territorial defence noted in Nov.

A fairly common resident in the western ramparts and highlands (800-3,000 metres), in wooded areas. Confined to wadis at the lowest altitudes (MIE). Some marginal downward movement (to 600 metres at least) occurs in winter (MIE, Expedition data).

Monticola saxatilis **Rock Thrush**

Not recorded during the Expedition.

A passage migrant recorded from all areas, up to 2,700 metres. Uncommon in spring, with 1 at Wadi Duba on 25 Jan (NOSY) and the other 16 birds between 8 Feb and 24 April (Cornwallis & Porter 1982; Brockie 1985; MASB, JK, SCM, RPM); most in Apr, no records from Mar. Rare in autumn, with 4 singles recorded 9 Sep-10 Oct, in the highlands (Phillips 1982; MIE). No records Nov-Dec.

Monticola solitarius **Blue Rock Thrush**

Twenty recorded, 11 Oct-3 Dec, in the southern uplands and highlands (including the Sa'dah area), at 1,000-3,600 metres.

A regular but localised winter visitor, not uncommon from the Tihamah foothills to the highlands (350-3,600 metres); most common at higher altitudes. Usually on cliffs or steep, rocky slopes, occasionally in towns (Phillips 1982; MIE, Expedition data, JK). Extreme dates 21 Sep-6 Apr; main arrival in Oct, main departure in Feb.

Turdus menachensis **Yemen Thrush**

At least 17 individuals recorded from six sites in the western ramparts and highlands (though not in the Sa'dah area), at 1,200-2,900 metres. For details of this species, see Bowden (1987a).

Endemic to south-west Arabia. A localised resident in the western ramparts and highlands (1,200-2,900 metres), usually in wooded areas.

Turdus ruficollis **Black-throated Thrush**

Not recorded during the Expedition.

The only record is of 1 (race *atrogularis*) at Manakhah (c. 2,100 metres) on 24 Dec 1912 (Sclater 1917).

Turdus philomelos **Song Thrush**

One at Ma'rib dam on 1-2 Dec, presumably attracted by the plentiful supply of fresh water and the food in nearby cultivation.

A scarce winter visitor, recorded 14 Nov-13 Feb at five 'green' sites in the western ramparts and interior desert between 1,100 and 2,200 metres (Phillips 1982; MIE, SF, JK, NOSY, DDP). Yemen Thrush was also present at most of the sightings.

Parisoma buryi **Yemen Warbler**

At least 16 individuals recorded at three sites in the highlands: Shibam/Kawkaban (2,700-2,800 metres), Wadi Duba (1,900-2,000 metres) and Wadi Maytam (1,900 metres). For details of this species, see Brooks (1987).

Endemic to south-west Arabia. A very localised resident of the western ramparts and highlands (1,700-2,900 metres), restricted to high-altitude areas with enough well-grown *Acacia* trees.

Cisticola juncidis **Fan-tailed Warbler**

All of the 121 birds seen were on the Tihamah (0-200 metres) in crop-growing areas, thus mostly on the eastern side. Pairs seen and song heard throughout Oct-Nov; food-carrying noted on 21 Oct.

A locally common resident of cropland (millet/sorghum) on the Tihamah, where commonest, and in the Tihamah foothills and lower western ramparts up to 1,200 metres.

Prinia gracilis **Graceful Warbler**

Found throughout the country (including the Sa'dah area) up to 2,800 metres. 842 recorded, the largest count being 110 at Hodeidah sewage lagoons on 16 Oct. Paired and in song throughout Oct-Nov; food-carrying, 14-15 Oct.

A fairly to very common resident in all regions up to 3,200 metres, almost wherever there is perennial vegetation.

Scotocerca inquieta **Scrub Warbler**

39 recorded, from 2,800 metres in the highlands down to 1,700 metres on the western ramparts and eastern flanks. The largest day-total was 15 in the Sa'dah region on 15 Nov. Pairs seen and song heard throughout the period.

A not uncommon resident of the western ramparts, highlands and eastern flanks, on rocky hillsides (1,600-3,500 metres). In late winter some birds have been recorded from the Tihamah foothills or plain (Brockie 1985).

Acrocephalus schoenobaenus **Sedge Warbler**

Five recorded: 3 at Ta'izz dam on 31 Oct; 1 at Hidhran on 4 Nov; 1 at a small marsh east of Al Qutay' on 27 Nov (possibly wintering).

A scarce passage migrant (possibly winters too) which has been recorded only from wet *Typha* beds (200-2,300 metres). Other records are: 1 near Ta'izz dam on 12 Apr and 3 there on 13 Apr 1986 (RPM); 2 at Hidhran on 8 Sep and 3 there on 26 Sep 1984 (MIE); several on Qa' al Haql, 3-10 Oct 1979 (Phillips 1982); 1 at Hidhran, 27 Oct 1982 (RFP, NJR).

Acrocephalus palustris **Marsh Warbler**

One at Wadi Maytam on 21 Nov. Also a probable at Al 'Urj on 26 Oct and another at Wadi Maytam on 5 Nov.

A passage migrant from coast to highlands (up to 2,500 metres), fairly common in spring, rather uncommon in autumn. Usually found in moist, green, well-wooded areas. Extreme dates 11 Apr-11 May and 17 Sep-21 Nov; peak passage Apr/May and Oct.

Acrocephalus scirpaceus **Reed Warbler**

13 recorded at seven sites from the coast to the highlands (up to 2,000 metres), 26 Oct-27 Nov. Song heard from wintering birds.

An uncommon autumn passage migrant and winter visitor, found in mangroves, in wet *Typha* beds on the Tihamah and in the southern uplands (where it winters), and in green areas

in the highlands (up to 2,000 metres). Extreme dates 27 Oct-9 Jan, plus 1 at Al Hajjaylah on 12 Apr (Hartert 1917).

Acrocephalus stentoreus **Clamorous Reed Warbler**

13 recorded (including 2 trapped) at four coastal mangrove sites, 25 Oct-26 Nov: 5 near Ar Ru'ays, 4 at Al 'Urj, 3 13 km. north of Ibn 'Abbas and 1 at Al Luhayyah. Birds seen on 25 Oct were in sub-optimal habitat and were tired and approachable, so perhaps were recently-arrived migrants. Subsong recorded in Nov; by the end of the period birds were singing quite strongly.

At least 8 singing in mangroves at Al Luhayyah on 30 Jan 1982, originally considered to be Great Reed Warbler (Brockie 1985), are now considered to be this species in the light of the Expedition's records (K. Brockie *in litt.*), and are thus the first records for North Yemen, though first positively identified in 1984, when 1 at Al 'Urj on 10 Jan (RFP). Other records are: many, singing strongly, in extensive mangroves between Al Luhayyah and Midi in late Mar 1986 (SF); 3 on 14 Apr and 2 on 16 Apr 1986 at Al 'Urj (MIE). Song seems to increase in volume and length of delivery through the winter up till the end of Mar, when most birds seem to depart; birds in Apr were singing only very sporadically. Not recorded from Al 'Urj in summer, though visits were short (MIE). Thus it appears to be a not-uncommon winter visitor to coastal mangroves, with no reports of breeding. However, since it breeds in mangroves on the Red Sea coast of Saudi Arabia (Stagg 1984; Meadows 1986) and is presumed to breed in coastal north-west Somalia (Ash & Miskell 1983), a thorough search of mangroves during summer would be welcome, in order to ascertain whether the species really is present and breeding.

Acrocephalus arundinaceus **Great Reed Warbler**

One in a field of millet near Ma'rib dam on 2 Dec.

A rare passage migrant, possibly overwintering. The only other records are: 1 near Ma'rib on 24 April 1986 (RPM), 1 in Sana'a on 17 Aug 1983, 1 in Wadi Subah on 18 Aug 1982 and 1 at Hidhran on 8 Sep 1984 (MIE). See Clamorous Reed Warbler for details of a record by Brockie (1985).

Hippolais pallida **Olivaceous Warbler**

141 recorded, 13 Oct-26 Nov (also a probable on 28 Nov), mostly on the Tihamah and in the foothills up to 500 metres, with one record from the Ta'izz region (1,000 metres). The largest count was of 60 north of Hodeidah, 19 Oct. Subsong heard on 19 Oct.

A common passage migrant throughout the country (up to 2,400 metres), occasionally very common in autumn; probably overwinters in small numbers, since 2 at Zabid on 18 Jan (Brockie 1985). Otherwise, extreme dates are 13 Mar-12 May and 12 Jul-26 Nov; peak passage in Apr and Aug/Sep.

Hippolais languida **Upcher's Warbler**

22 recorded, all on the eastern Tihamah, 15 Oct-26 Nov. Subsong heard on 27 Oct and 13 Nov.

A fairly common passage migrant in spring and autumn throughout the country up to 2,400 metres. Extreme dates 4-26 Apr and 6 Jul-26 Nov; peak autumn passage in Aug. Not recorded Dec-Mar, though perhaps overlooked.

Hippolais olivetorum **Olive-tree Warbler**

One in *Acacia* woodland near Al Husayniyah on 17 Oct.

The only other record, also from the Tihamah, has occurred since: 1 near Bajil on 15 Apr 1986 (Martins 1986).

Hippolais icterina **Icterine Warbler**

Not recorded during the Expedition.

The only record is of 1 in the interior desert hills at Sha'ib Qurra on 30 Jul 1936 (Bates 1937a); identity of specimen confirmed by P. Clement (*per* F. E. Warr). A rare migrant in Saudi Arabia (Jennings 1981).

Sylvia cantillans **Subalpine Warbler**

Not recorded during the Expedition.

The only record is of an adult female trapped at Ad Durayhimi on the Tihamah, 10 Jan 1982 (Brockie 1985). An uncommon migrant in western regions of Saudi Arabia (Jennings 1981).

Sylvia mystacea **Ménétries's Warbler**

110 recorded, 15 Oct-2 Dec, predominantly from the Tihamah (0-250 metres), with only 3 records from higher ground: Ta'izz sewage lagoons (1,100 metres), Ma'rib dam (1,100 metres) and near Raydah (2,200 metres). The largest count was 29 in a wadi 4 km. north of Suq 'Abs, 25 Nov. Subsong heard on 25 Oct.

A fairly common winter visitor to the Tihamah, southern uplands and interior desert (all relatively flat areas), occurring elsewhere (up to 2,400 metres) during arrival in autumn (Oct) and departure in spring (Feb). Extreme dates 15 Oct-1 Mar.

Sylvia nana **Desert Warbler**

28 recorded, 14 Oct-2 Dec: 5 at five sites on the Tihamah, 1 near Raydah (2,200 metres) and 22 at Ma'rib dam and at another site on the interior desert fringe.

Only one other record: 1 in Wadi Raghwan on 4 Oct 1936 (Bates 1937a, 1938). Thus an uncommon passage migrant and winter visitor recorded from the Tihamah, northern highlands and interior desert (where fairly common).

Sylvia leucomelaena **Arabian Warbler**

29 recorded, 27 on the Tihamah and 2 in the foothills (50-300 metres). The largest count was of 11 in a wadi 4 km. north of Suq 'Abs on 25 Nov. Subsong heard and pairs observed in Nov.

A fairly common but local resident of the Tihamah foothills and western ramparts (250-1,700 metres), and ot the eastern flanks and foothills (1,100-1,900 metres), confined to open *Acacia/Commiphora* bushland. Two records from higher altitudes: 6 at Kawkaban/Shibam (2,800 metres) on 8 Apr (Madge 1981; MASB, SCM) and 1 there on 22 Dec (JK). In winter, disperses down to *Acacia*-lined wadis on the Tihamah, where not recorded in other seasons (JSA, Expedition data, DDP).

Sylvia hortensis **Orphean Warbler**

Not recorded during the Expedition.

A rare winter visitor to lower altitudes, with only 3 records: 1 at Mafraq al Mukha on 29 Oct 1979 (Phillips 1982), 1 collected by Meinertzhagen at Ta'izz on 25 Dec 1948 (F. E. Warr *pers. comm.*) and one 11 km. south of Bayt al Faqih on 1 Jan 1976 (JSA).

Sylvia nisoria **Barred Warbler**

Four recorded at two sites on the Tihamah: 3 on 17 Oct, 1 on 2 Nov.

A passage migrant typically in small, but occasionally large numbers: e.g. 150-200 at Al Midman on 15 Apr (Martins 1986). Mostly recorded from the Tihamah but recently also from the interior desert, where 36 on 21-24 Apr (Martins 1986). The only record from elsewhere is from Shibam in the highlands. Recorded passage in autumn is very limited compared with spring – it is not known whether this reflects a different autumn migration route or lack of coverage on the Tihamah during the appropriate (presumably early) autumn period. Extreme dates 7-24 Apr and 17 Oct-2 Nov.

Sylvia curruca curruca **Lesser Whitethroat**

33 recorded, 10 Oct-2 Dec, in all regions except the eastern flanks.

A passage migrant in small numbers (considerably scarcer than *S. c. minula*), with some perhaps overwintering, though accurate assessment of status (e.g. end of autumn passage, should this race not winter) is confounded by confusion with *S. c. minula*. Distinction is seldom

made between the two races occurring in Arabia in the literature, and future observers are requested to attempt subspecific identification wherever possible: see Wallace (1973). Earliest autumn date 27 Sep.

Sylvia curruca minula **Desert Lesser Whitethroat**

217 recorded, 14 Oct-2 Dec, in all regions except the eastern flanks. Generally common and occasionally abundant, e.g. in the interior desert where birds were almost certainly wintering.

A passage migrant and winter visitor, more common in the interior desert than on the Tihamah, and apparently scarce on the highland plateau. Main departure from the highland plateau occurs early Feb (MIE). See also comments under *S. c. curruca*.

Sylvia communis **Whitethroat**

One on the Tihamah near Hodeidah on 16 Oct and another 16 km. south-west of Ma'bar on the highland plateau on 8 Nov.

A passage migrant in small numbers, recorded from the Tihamah to the interior desert. The main autumn passage occurs in Sep (MIE). Extreme dates 21 Mar-28 Apr and 27 Aug-8 Nov; also 1 record in winter, on the Tihamah (Brockie 1985).

Sylvia borin **Garden Warbler**

One at Kawkaban on 11 Oct.

No other records for North Yemen. An uncommon migrant in all areas of Saudi Arabia (Jennings 1981) and a scarce autumn passage migrant, perhaps in spring also, in Oman (Gallagher & Woodcock 1980).

Sylvia atricapilla **Blackcap**

57 recorded, 11 Oct-1 Dec, from all regions except the eastern flanks, though generally more frequent in well-watered upland localities (e.g. Shibam/Kawkaban, Al Mahwit, Ibb). Maximum concentration: 14 at Shibam/Kawkaban.

A very common passage migrant though seems so far to be scarce in the interior desert. Extreme dates 25 Mar-21 May and 17 Sep-1 Dec.

Phylloscopus umbrovirens **Brown Woodland Warbler**

228 at a minimum of 13 localities in the Tihamah foothills, western ramparts and highland plateau (though not recorded in the Sa'dah area), at 750-2,800 metres. Particularly common in the Al Mahwit area and in the valley above Sabt al Mahrab on Jabal Bura' where 97 on 28 Nov. Song recorded 11 Oct-28 Nov.

Widespread, largely in the highlands. Absent from the eastern flanks eastward. There are several Dec-Jan records from various localities and it thus appears that the species is regularly present in winter. The status of the south-west Arabian population of this species is unclear – it may be a resident breeder or a partial migrant breeder.

Phylloscopus fuscatus **Dusky Warbler**

Not recorded during the Expedition.

One record from the Tihamah (Brockie 1985), but only a brief description was published.

Phylloscopus sibilatrix **Wood Warbler**

Nine birds at various localities in the Tihamah and western ramparts: 1 at Hodeidah sewage lagoons, 16 Oct; 1 near Az Zaydiyah, 25 Oct; 2 at Ta'izz sewage lagoons, 31 Oct; 4 between Al Mahwit and Khamis Bani Sa'd, 12 Nov; 1 20 km. north of Wadi Mawr, 25 Nov.

These are the only records for North Yemen, so presumably a scarce passage migrant, though not yet recorded in spring. A rare migrant in Saudi Arabia (Jennings 1981) and scarce (in both spring and autumn) in Oman (Gallagher & Woodcock 1980).

Phylloscopus neglectus **Plain Willow Warbler**

Not recorded during the Expedition.

One on the lower slopes of Jabal Sabir, 23 Sep 1979 (Phillips 1982), is the only record. Three winter individuals have been recorded from Oman (Gallagher & Woodcock 1980).

Phylloscopus collybita **Chiffchaff**

82 recorded in all regions except the eastern flanks, 28 Oct-3 Dec.

A rather common passage migrant and common winter visitor to highland regions (1,100-2,800 metres). No winter records from the Tihamah, and winter status in the interior desert is unknown. Does not arrive before mid-autumn (no records before 27 Sep), the bulk of the wintering population reaching North Yemen from late Oct. Departure of wintering birds peaks at the end of Feb/early Mar (MIE), with latest spring date 25 Apr. Four *P. c. tristis* were recorded in Mar 1982 (Cornwallis & Porter 1982).

Phylloscopus trochilus **Willow Warbler**

Five in the Tihamah and foothills, 15 Oct-2 Nov.

A scarce passage migrant throughout, commoner in spring than in autumn (MIE). Occurs from late March to early May and from late Aug to mid or late Sep.

Muscicapa striata **Spotted Flycatcher**

Nine recorded on the Tihamah (mostly) and highland plateau.

A fairly common passage migrant from coast to highlands, though most records are from the Tihamah. Extreme dates 10-30 Apr and 29 Aug-27 Oct (with peak passage in Sep: MIE). See also comments under Gambaga Flycatcher.

Muscicapa gambagae **Gambaga Flycatcher**

One on the Tihamah near Hodeidah on 17 Oct.

A migrant breeder, locally common in the well-vegetated wadis of the western ramparts and on the western fringe of the highland plateau (typically 800-2,800 metres). One additional record of migrants on the Tihamah: 2 at Al Midman on 16 Apr (Martins 1986). Extreme dates 13 Apr-17 Oct. There are no winter records from the Arabian peninsula and statements that it is resident in Saudi Arabia (Jennings 1981; Stagg 1984) are thus erroneous. Care is required when discriminating between this species and Spotted Flycatcher (see King 1978).

Ficedula sp. **Flycatcher sp.**

None recorded during the Expedition.

A female *Ficedula* flycatcher at Haddah on 2 Sep 1984 was either Semi-collared *F. semitorquata* or Collared *F. albicollis* (MIE).

Terpsiphone viridis **African Paradise Flycatcher**

47 were recorded on the Tihamah and in the foothills and western ramparts at 250-2,000 metres, 18 Oct-28 Nov. Most numerous in climax riparian woodland on Jabal Bura' above Sabt al Mahrab, with 26 on 28 Nov.

A resident breeder in the areas noted above. White morph birds are rare, only one being seen during the Expedition.

Turdoides squamiceps **Arabian Babbler**

397 recorded in all regions up to 2,300 metres. Common in well-vegetated areas and locally abundant, most frequently so on the Tihamah and in the foothills.

A resident breeder, recorded up to 2,800 metres in summer and to 2,700 metres in winter. Often associated with *Acacia*.

Anthreptes metallicus **Nile Valley Sunbird**

502 recorded in the Tihamah and foothills (up to c. 1,500 metres) and in the interior desert. Particularly abundant in *Acacia* savannah on the eastern Tihamah between Mafraq al Mukha and Zabid and in subtropical drought-deciduous woodland on Jabal Bura'. Song and display were recorded on 26 Nov, and recently fledged young were observed on 19 Nov.

A resident breeder, abundant throughout lowland desert regions and not uncommon up to 1,600 metres on both sides of the highland massif. A record at 2,200 metres near Raydah in the central highlands is the highest known altitude (Phillips 1982). Apparently absent from Jabal Bura' in May-Jun 1986 (MIE), so it seems that altitudinal distribution changes seasonally.

Nectarinia habessinica **Shining Sunbird**

425 recorded at 100-2,200 metres from the eastern fringe of the Tihamah to the western ramparts and in the interior desert; locally also in the northern and eastern fringes of the highland plateau. Song was recorded 15 Oct-13 Nov and recently fledged young were observed 13 Nov.

A resident breeder in the areas noted above.

Nectarinia osea **Orange-tufted Sunbird**

314 recorded from the Tihamah foothills to the highland plateau (250-2,800 metres). On the plateau it apparently occurs throughout but is scarce in the poorly vegetated northern part. Song was recorded 1-5 Nov.

A resident breeder, recorded at 250-3,200 metres. The lowest recorded altitude (on the lower slopes of the Tihamah foothills) is exceptional and perhaps due to winter movement, but records of up to 20 birds down to 750 metres on Jabal Bura' on 18 Oct and 27-28 Nov indicate that the minimum altitude at which the species commonly occurs is clearly below that previously documented (Cornwallis & Porter 1982). In lower part of altitudinal range co-exists with Shining Sunbird.

Zosterops abyssinica **White-breasted White-eye**

401 recorded from the Tihamah to the highlands, often in urban environments. Locally abundant, e.g. at 750-1,000 metres in moist subtropical riparian woodland above Sabt al Mahrab on Jabal Bura' where 65 recorded in one small valley on 27-28 Nov (though scarcer here in summer: MIE). Song recorded on 5 Nov, recently fledged young on 17 Nov and display on 29 Nov.

A resident breeder, common and widespread, most numerous in well-vegetated areas. Generally found above 1,500 metres, but also occurs commonly in the Tihamah foothills where conditions are suitable. Only 3 records on the Tihamah (2 of which are from areas close to the foothills), and absent from drier regions with little suitable habitat, e.g. the northern part of the highland plateau (around Sa'dah), the eastern flanks and interior desert.

Oriolus oriolus **Golden Oriole**

One on 18 Oct at the base of Jabal Bura' and 2 on 3 Nov near Hajdah.

A passage migrant, recorded from the Tihamah to the highlands. Common occasionally in May-Jun (e.g. large numbers recorded at Sana'a in the first two weeks of May: J. Hickerton), but more frequent in autumn, with the main passage in Sep (MIE).

Tchagra senegala **Black-headed Bush Shrike**

42 recorded from nine sites in the eastern fringe of the Tihamah, the foothills and western ramparts at 250-2,000 metres, but commonest in *Euphorbia* scrub at 1,000-1,500 metres. Song recorded 18 Nov.

An uncommon resident breeder apparently primarily restricted to the well-vegetated regions noted above, up to 2,000 metres. Recorded once from the coast, at Al Khawkhah (MASB, SCM).

Lanius isabellinus **Isabelline Shrike**

129 recorded, 9 Oct-2 Dec, in all regions except the eastern flanks, though 114 were on the Tihamah.

A fairly common passage migrant throughout, and a winter visitor in the lowlands only. The smaller numbers recorded in winter suggest that many of the birds recorded by the Expedition were on migration rather than wintering. Recently, 'falls' of shrikes *Lanius* sp. have been observed in spring in the interior desert around Ma'rib (e.g. 24 *L. i. isabellinus* on 22-24 Apr: RPM), indicating that the route taken may be directly across the Arabian peninsula. Extreme dates 5 Sep-7 May. Brockie (1985) suggested a habitat preference between *phoenicuroides* in the foothills and *isabellinus* on the Tihamah, and MIE has also concluded that there may be a bias towards *phoenicuroides* in the highlands and *isabellinus* on the Tihamah during passage.

Lanius collurio **Red-backed Shrike**

Twelve recorded on the Tihamah, 17 Oct-25 Nov.

An uncommon passage migrant throughout. As with Isabelline and Lesser Grey Shrikes, recent observations at Ma'rib in the interior desert (e.g. 12 on 22-24 Apr: RPM) suggest that spring passage occurs across the interior of the Arabian peninsula. Passage in spring is apparently heavier than in autumn (MIE, C. van Schoot). Recorded in spring from Mar to 16 May, and in autumn from 28 Aug-25 Nov (JF, C. van Schoot). Only 1 winter record: at Ta'izz on 12 Dec.

Lanius minor **Lesser Grey Shrike**

Not recorded during the Expedition.

A scarce passage migrant throughout but commonest on the Tihamah and in the interior desert. Often reported in small concentrations, the largest being 17 around Ma'rib on 23-24 Apr (RPM) – a record which suggests that passage occurs across the interior of Arabia. So far recorded 15-24 Apr and 27 Aug-20 Sep, plus surprisingly 8 winter records, 5 Jan-11 Feb (Brockie 1982; DDP).

Lanius excubitor **Great Grey Shrike**

205 recorded from all regions except the eastern flanks, up to 2,800 metres. Most common on the Tihamah, and scarce in the highlands eastward.

A resident breeder, passage migrant and winter visitor. The resident Arabian population of darker *L. e. buryi* is augmented by migrants from the north (earliest autumn date 14 Aug: MIE) which occur throughout both the highlands and Tihamah (at least on migration) but are most common in winter on the Tihamah. In the breeding season *buryi* is most common in the Tihamah foothills and in the south of the western ramparts, but also occurs on the Tihamah and in the highlands up to 2,600 metres (MIE).

Lanius senator **Woodchat Shrike**

Four recorded from three sites in the northern Tihamah, 18 Oct-13 Nov.

A scarce passage migrant occurring from the Tihamah to the highlands. Extreme dates 11 Mar-19 Apr and 11 Aug-13 Nov, plus winter records at Wadi Warazan in the southern uplands: 1 on 11 Jan, 3 on 16 Feb (MIE, SF).

Lanius nubicus **Masked Shrike**

36 recorded, 17 Oct-26 Nov, on the Tihamah and in the foothills and western ramparts, with a maximum of 15 in an *Acacia*-fringed wadi between Suq 'Abs and Harad on 25 Nov.

An uncommon passage migrant recorded from the Tihamah to the highlands, consistently observed in above-average numbers in the northern Tihamah between Suq 'Abs and Harad and in the southern uplands around Ta'izz. Only 3 winter records, from the Tihamah. Recorded 16 Sep-18 Apr.

Corvus splendens **Indian House Crow**

164 recorded, in and around Hodeidah (concentrations of up to 50) and at Al Khawkhah (6, the first record for this locality).

A resident breeder restricted to urban settlements and their immediate environs in the coastal Tihamah between Al Khawkhah and As Salif. A recent colonist, first recorded 2 Jan 1976 (JSA).

Corvus ruficollis **Brown-necked Raven**

1,378 recorded, in all regions. The largest gathering was 50 at Hidhran rubbish tip, 31 Oct.

A resident breeder, common throughout the country though scarcer in lowland regions, often concentrating in flocks around urban settlements, especially at rubbish tips.

Corvus rhipidurus **Fan-tailed Raven**

6,502 recorded, in all regions. Common in highland regions up to the highest summits, and locally abundant, particularly around cliff-girt settlements – e.g. 800 at Shibam/Kawkaban on 7 Nov, 500 at Hidhran rubbish tip on 18 Nov and 600 at Wadi Dahr on 30 Nov. More localised in much smaller numbers in the lowland desert regions: mostly absent from the Tihamah, but small numbers were encountered occasionally; markedly scarce on the eastern flanks and the edge of the interior desert.

A resident breeder, more strongly associated with cliffs and human habitation than Brown-necked Raven. Roosts in large flocks throughout the year except Apr-May (MIE).

Plate 1
Arabian Waxbill Estrilda rufibarba is found throughout the wetter and more fertile areas of the highlands.
Photograph M. R. W. Rands

Plate 2
Arabian Golden Sparrow Passer euchlorus inhabits the coastal plain in vast numbers and is possibly the most numerous of the endemic birds.
Photograph M. R. W. Rands

Plate 3
Yemen Linnet Carduelis yemenensis occurs throughout the North Yemen highlands where it was widely recorded by the Expedition
Photograph R. F. Porter

Plate 4
Golden-winged Grosbeak Rhynchostruthus socotranus, perhaps the most colourful of the endemic birds, is only found where Euphorbia schimperi and Acacia spp. grow together.
Photograph M. R. W. Rands

Plate 5
South Arabian Wheatear Oenanthe lugens lugentoides is perhaps a race of Mourning Wheatear O. lugens, but differs in showing a marked sexual dimorphism.
Photograph N. J. Redman

Plate 6
Arabian Woodpecker Dendrocopos dorae: the only woodpecker in Arabia, now confined to areas of relict Acacia woodland in Yemen and juniper forest in S.W. Saudi Arabia.
Photograph R. F. Porter

Plate 7
Arabian Accentor Prunella fagani has the most restricted distribution of all S.W. Arabia's endemic birds, being confined to the highlands (above 2,000 metres) of the two Yemens.
Photograph M. R. W. Rands

Plate 8
Bald Ibis Geronticus eremita, one of the world's rarest birds, were extensively observed by the Expedition in the wadis around Ta'izz where a group of 12 adults and 2 immature birds was discovered in 1985. Seen here with Cattle Egrets Bubulcus ibis.
Photograph R. F. Porter

Plate 1

Plate 2

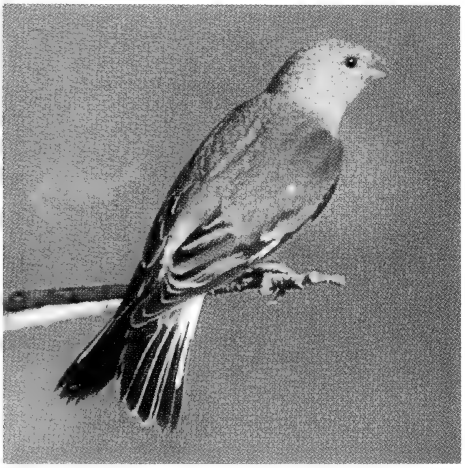


Plate 3

Plate 4

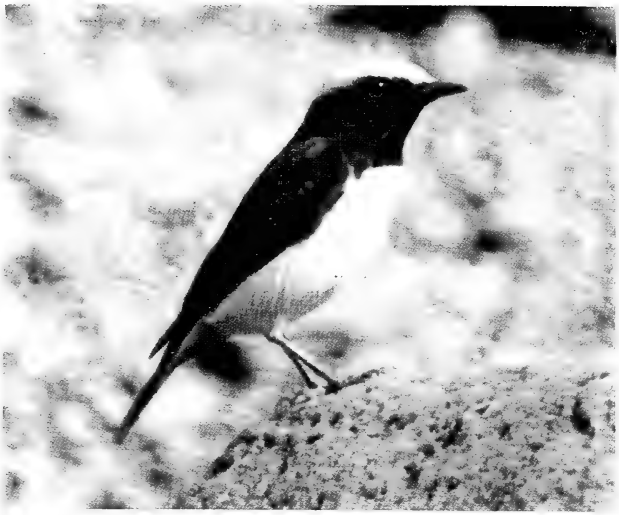


Plate 5

Plate 6

Plate 7

Plate 8

Onychognathus tristramii **Tristram's Grackle**

1,425 recorded, in the Tihamah foothills, western ramparts, highland plateau and interior desert. Concentrations of 350 at Al Mahwit on 11 Nov, 280 between Sa'dah and Jabal Umm Laylah on 15 Nov, 100 at Jabal Bura' on 28 Nov and 110 at Shibam/Kawkaban on 3 Dec.

A resident breeder from 300 to 3,200 metres (Cornwallis & Porter 1982), though the only record from the interior desert is one recorded by the Expedition in the Ma'rib area on 2 Dec and the species has not been seen in the eastern flanks.

Cinnyricinclus leucogaster **Amethyst Starling**

Not recorded during the Expedition.

Occurs throughout the Tihamah (as a breeder, only on the eastern fringe), the foothills, western ramparts and highlands up to 2,500 metres. A migrant breeder, most common in the green wooded areas of the southern uplands and in the foothills. Extreme dates 28 Mar-17 Sep (SF).

Sturnus vulgaris **Starling**

Not recorded during the Expedition.

One at Zabid on 16 Jan 1982 (Brockie 1985) is the only record. A winter visitor in Saudi Arabia, uncommon south of the Arabian Gulf (Jennings 1981), and a passage migrant and winter visitor in most years to Oman (Gallagher & Woodcock 1980).

Creatophora cinerea **Wattled Starling**

Four recorded at two sites on the central Tihamah: a juvenile near Al Mukayminiyah on 14 Oct and 3 adults (in non-breeding plumage) 10 km. west of Al Akamah (near Jabal Bura') on 22 Oct.

No other records for North Yemen, though small numbers occur irregularly in Oman, Jun-Jan (Gallagher & Woodcock 1980). An African species, well known as a nomadic follower of locust swarms (with which the 3 adults above were in close association).

Passer domesticus **House Sparrow**

2,199 recorded. Widely distributed but found almost exclusively around settlements and in croplands.

A resident breeder, occurring in all regions up to 3,200 metres (Cornwallis & Porter 1982). Those authors found it most common at higher altitudes, but Phillips (1982) found it uncommon in villages, especially at higher altitudes in autumn.

Passer euchlorus **Arabian Golden Sparrow**

2,431 recorded from eleven localities on the Tihamah between Suq 'Abs and Al Fazzah. Locally abundant, being most numerous in cultivated regions of the Tihamah. For details of this species, see Bowden (1987b).

A resident but local breeder on the Tihamah, occurring in concentrations of up to 1,000 and rarely in parties of less than 10. Largely absent from uncultivated areas.

Petronia dentata **Bush Petronia**

56 recorded from several localities in the eastern Tihamah fringe (where least common), the foothills and western ramparts. Most frequently encountered in well-cultivated regions with scattered trees, e.g. *Dobera glabra* 'parkland' just west of the lowest foothills from the base of Jabal Bura' north to Al Kadan, in the well-watered, terraced highlands around Al Mahwit, and especially in the southern uplands from Ibb southward. A pair were seen carrying food to a nest with young in an old Arabian Woodpecker nest-hole on 1 Nov, and recently-fledged young were recorded on 10 Nov. Song was heard on 28 Oct-27 Nov.

A resident breeder in the regions listed above (250-1,900 metres).

Ploceus galbula **Rüppell's Weaver**

2,204 recorded at up to 2,500 metres in all regions except the eastern flanks – predominantly on the Tihamah however (over 65 per cent of the individuals observed), with smaller numbers in the western ramparts. Much scarcer elsewhere and rare on the northern highland plateau (only 2 birds seen).

A resident breeder occurring in all regions (seen in the eastern flanks by MIE). Much scarcer at higher altitudes in autumn and winter than in summer, and upward movement into the western ramparts and western fringe of the highland plateau occurs in Apr-Jun, usually up to 2,400 metres but occasionally to 2,700 metres, where breeding has been recorded (MIE).

Ploceus sp. **Weaver sp.**

Two unidentified weavers were seen in scattered *Acacia* near Jabal al Khattarin 34 km. from Sa'dah on the road to Sana'a on 16 Nov. The birds, in fresh non-breeding plumage, were considerably smaller than Rüppell's Weaver – slightly larger and stockier than House Sparrow, with a markedly short, round-cornered tail. Head uniform lime-green, throat bright yellow. Lower breast and belly white; undertail-coverts pale yellowish. Upperparts yellowish-green, fairly strongly streaked black. Rump yellow (presence or lack of streaking could not be ascertained). Wing and tail feathers almost black with conspicuous discrete greenish-yellow fringes; wing-coverts similarly fringed. Bill bluish, similar in shape to Rüppell's Weaver though a little shorter; legs bluish; iris red. Call "*chep*". Rather wary and skulking; feeding in crown of *Acacia*.

Estrilda rufibarba **Arabian Waxbill**

957 recorded from the eastern fringe of the Tihamah (at c. 250 metres) and numerous localities in the foothills and western ramparts. Large numbers found as follows: 103 west of Jabal Bura', 22 Oct; 95 in a wadi 5 km. east of Madinat ash Shirq, 28 Oct; 126 at Wadi an Nashamah and 230 at Wadi Hammam 'Ali, 20 Nov. For details of this species, see Christensen and Porter (1987).

A resident breeder, typically recorded from 500 to c. 2,500 metres, occasionally straying down to the cultivated regions of the eastern Tihamah and up to 2,700 metres. Only one record in the more arid western part of the Tihamah (25 at Yakhtul on 9 Mar: JK), though it apparently occurs in the lowlands of the Asir Tihamah in Saudi Arabia (Jennings 1981). Recorded from a few localities on the south-west fringe of the highland plateau (but otherwise absent from this region) and from wadis in the eastern flanks (Phillips 1982). Large flocks numbering several hundred (mixed with Zebra Waxbills) have been observed roosting in dense stands of *Typha* in the Ta'izz area in Mar-Apr.

Amandava subflava **Zebra Waxbill**

194 recorded at five localities: up to 120 at a small *Typha* marsh at Hidhran on 4 and 18 Nov; 10 in Wadi Rasyan (near Mafraq al Mukha) on 4 Nov; 24 on 5 Nov and 30 on 21 Nov in Wadi Maytam near Ibb; 2 12 km south-east of Zabid on 23 Nov; 2 beside pools in Wadi Siham, 12 km east of Al Qutay' on 27 Nov. Recently-fledged young were recorded on 5 and 21 Nov and nest-building on the former date.

A resident breeder recorded from the Tihamah, foothills and western ramparts (140-2,000 metres), often in close association with water. It appears to have undergone range-expansion in recent years. Being an attractive cagebird it may have been introduced,but there is no evidence for this.

Euodice cantans **African Silverbill**

425 recorded from the Tihamah to the western fringe of the highland plateau at 2,200 metres (near Dawran and around Sa'dah), though generally very scarce above middle altitudes. Adults were seen entering and leaving a nest on 26 Oct.

A resident breeder in the regions noted above, also recorded from the eastern flanks. No breeding season records above c. 1,600 metres.

Serinus rothschildi **Arabian Serin**

263 recorded from numerous localities in the western ramparts and highland plateau. The largest number was 60 in a small area of Wadi Maytam near Ibb on 21 Nov. For details of this species, see Everett (1987b).

A resident breeder in the regions noted above, and also recorded from wadis in the south of the eastern flanks (MIE). Altitudinal range 1,000-2,800 metres. Generally scarcer than Yemen Serin (not occurring in large flocks) and most common in areas of cultivation with scattered trees and bushes at middle altitudes in the western ramparts.

Serinus menachensis **Yemen Serin**

577 recorded, exclusively on the highland plateau. For details of this species, see Everett (1987b).

A resident breeder, common and widespread from 2,000 metres to the high summits, often occurring in urban settlements, though much scarcer on the eastern fringe of the highlands. More common at higher altitudes than Arabian Serin and more often encountered in flocks, frequently in treeless areas.

Rhynchostruthus socotranus **Golden-winged Grosbeak**

97 recorded at six sites in the western ramparts and on the western fringe of the highland plateau. A maximum of 30 was recorded at one site near Ta'izz, elsewhere observations were of 1-10 individuals. For details of this species, see Martins (1987).

A resident breeder restricted to the regions noted above, at 1,100-2,800 metres. Closely associated with *Euphorbia* scrub.

Carduelis yemenensis **Yemen Linnet**

385 recorded:all in the western ramparts and highland plateau apart from 1 at 590 metres on Jabal Bura'. For details of this species, see Bowden and Brooks (1987).

A resident breeder, widespread and common from 1,800 metres to the high summits. Not recorded from the Sa'dah area, however, and scarcer on the eastern fringe of the highlands, where not known below 2,200 metres.

Bucanetes githagineus **Trumpeter Finch**

Not recorded during the Expedition.

The only records are: a pair at Jiblah, 14 Apr 1975 (Thiollay & Duhautois 1976); 26 between Ma'rib and the edge of the eastern flanks, 7 Jan 1984 (RFP); 9 at Ma'rib dam and 25 north of Sirwah, 27 Jun 1986 (MIE). Perhaps a resident breeder, though there is no evidence that the few records do not refer to wandering flocks.

Emberiza striolata **House Bunting**

Ten at a site between At Tawilah and Al Mahwit on 10 Nov.

Presumably a resident breeder, recorded from all regions except the Tihamah (500 to c. 2,500 metres), though scarce and extremely local. The only other records are as follows: 1 at Shudhayf 1 Aug 1936 (Bates 1937a), 1 at 500 metres in the foothills near Bajil, 13 Mar 1982 (Cornwallis & Porter 1982); a male taken near Manakhah, Jan 1913 (Sclater 1917); a pair (male singing) near Ta'izz on 15 Mar 1982 (Cornwallis & Porter 1982) and a few birds there in Sep 1979, when also common near Raydah (Phillips 1982); 1 carrying food at Bab al 'Ayn, 3 Apr 1982, and 8 in the Wadi Makhdarah area on 27 Jun 1986 (MIE); 3 pairs around Ma'rib, 21-24 Apr 1986 (Martins 1986).

Emberiza tahapisi **Cinnamon-breasted Rock Bunting**

328 recorded at numerous localities from the eastern fringe of the Tihamah to the highland plateau (180-2,900 metres). Song recorded 18 Oct-20 Nov, and recently fledged young seen on 4 and 11 Nov.

A resident breeder in the regions noted above, and also recorded breeding on the eastern flanks down to 1,600 metres (MIE). Common, particularly in the well-watered wadis of the western ramparts. Some downward altitudinal movement occurs outside the breeding season, as not recorded above 1,800 metres in winter.

Emberiza cineracea **Cinereous Bunting**

Seven at Al Mahwit (1,900 metres), 10-11 Nov.

A rare winter visitor with only 5 other records: 3 on Qa' al Haql (south of Yarim), 8 Oct 1979 (Phillips 1982); 1 at Manakhah (2,200 metres) on 26 Dec 1912, 1 at Wasil (1,220 metres) on 6 Mar 1913 (Sclater 1917); 2 collected by Bury at Manakhah on 11 and 31 Jan 1913 (specimens in the American Museum of Natural History, *per* F. E. Warr).

Emberiza hortulana **Ortolan Bunting**

Three on Jabal Abb Mahdi, 12 Oct.

A scarce passage migrant and winter visitor recorded from the Tihamah and western ramparts. All winter records are from the western ramparts. Extreme dates 12 Oct-23 Apr.

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PHILBY'S ROCK PARTRIDGE IN NORTH YEMEN

by

M. R. W. Rands

Philby's Rock Partridge *Alectoris philbyi* is thought to be, in evolutionary terms, a recent offshoot from the *A. chukar* superspecies that moved into Arabia in the Pleistocene and became isolated by the desiccation of the northern and central Arabian deserts (Watson 1962). Its known geographical range lies entirely within south-west Arabia but until 1979 it had not been recorded in North Yemen (Cornwallis & Porter 1982).

During the OSME Expedition to North Yemen in 1985 (see Rands *et al.* 1987), Philby's Rock Partridge was located on only two occasions. On 11 October a covey of five adults and four chicks, aged 6-8 weeks, were seen standing on and amongst boulders on a rocky hillside almost bare of vegetation (altitude 2,500 metres). The young birds were brownish, finely barred above with the faint shadow of the adults' black chin and throat beginning to appear; their legs were pinkish-white and distinctly paler than those of the adults.

This is the first breeding record for the species in North Yemen and it suggests that breeding may occur significantly later there than in Saudi Arabia (Meinertzhagen 1954); it also conflicts with the suggestion of Watson (1962) that Philby's Rock Partridge breeds a month earlier than the Arabian Red-legged Partridge *Alectoris melanocephala*. Later breeding of Philby's Rock Partridge in Yemen is supported by the observations of Cornwallis and Porter (1982) who saw large coveys of them in April – whereas Arabian Red-legged Partridges are already in pairs by February (Brockie 1985).

The second of the Expedition's records was of birds, heard only, on Arabia's highest mountain, Jabal an Nabi Shu'ayb, on 29 November. These birds were presumed to be amongst fallow and bare terraces on a rocky bare hillside at an altitude of approximately 3,600 metres. The call was a rapid "*chuk chuk-a-chuk-kar*" or "*chuk chuk chuk kar*", repeated with the rhythm of an old fashioned steam engine. When alarmed, the species utters an explosive "*chork chork chork*" in flight and also a squealing "*chuk-a-chuk-a-chuk*" or a babbling "*chuk-a-chuk-oo*" like a Chukar *A. chukar* (R. F. Porter *pers. comm.*).

The Expedition's two records, together with those of Beaman and Madge (1980), Cornwallis and Porter (1982), Phillips (1982) and M. I. Evans (*pers. comm.*), suggest that the species is distributed throughout the highlands of North Yemen above 2,300 metres where the habitat is rocky and sparsely vegetated (see *Figure* 1 in Rands & Rands 1987). Furthermore, when compared with the records of Bates (1937), Meinertzhagen (1954), Jennings (1981) and Stagg (1984), they indicate that the species is less abundant in North Yemen than in Saudi Arabia, perhaps because it prefers the more arid conditions of south-west Saudi Arabia.

There are at present insufficient data from Yemen to comment on the threats to, or conservation requirements of, Philby's Rock Partridge. It seems unlikely to suffer from habitat change, and current hunting pressures on the population are unknown – although, as with the other endemic partridge, it is likely that hunting does occur (Rands & Rands 1987).

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M. R. W. Rands, International Council for Bird Preservation, 219c Huntingdon Road, Cambridge CB3 ODL, ENGLAND.

Philby's Rock Partridge *Alectoris philbyi* S. Christensen

THE ARABIAN RED-LEGGED PARTRIDGE IN NORTH YEMEN

by

M. R. W. Rands and G. F. Rands

INTRODUCTION

The Arabian Red-legged Partridge *Alectoris melanocephala* is the largest and most morphologically distinct of the world's seven species of *Alectoris* partridge. It is endemic to the south-west corner of the Arabian peninsula and Oman. This paper describes the observations collected on the species by the OSME Expedition to North Yemen in autumn 1985 (see Rands *et al.* 1987), and considers them in the light of previously published material.

DESCRIPTION

The Arabian Red-legged Partridge is described, in comparison with Philby's Rock Partridge *A. philbyi* (the only other *Alectoris* partridge found in North Yemen) by Watson (1962) who notes that, as well as plumage differences of the head and throat, the bill of the Arabian Red-legged Partridge is heavier and longer than that of Philby's Rock Partridge. In addition, the Arabian Red-legged Partridge is both larger and longer-tailed than any other member of the genus. It is illustrated by Meinertzhagen (1954), Gallagher and Woodcock (1980) and Hollom *et al.* (*in press*).

VOICE

The call is a loud "*kok kok kok, chok chok chok chook*" which starts off as separate notes and gradually gathers momentum, running into a ripple of "*choks*". Other calls recorded include a low gutteral "*tuck-tuck-tuck*", a "*ru-ru-ru-ru*" repeated quickly, and a "*wow-wow-wow-wow*".

STATUS AND DISTRIBUTION

The Expedition recorded the Arabian Red-legged Partridge at ten sites on thirteen different dates between 2 November and 3 December 1985 (TABLE I). The altitudinal range (250-2,800 metres) extends that found in North Yemen by Cornwallis and Porter (1982) and agrees with the range observed in Saudi Arabia (Watson 1962; Jennings 1981), Oman (Gallagher 1977; Gallagher & Rogers 1980) and South Yemen (Guichard & Goodwin 1952).

A comparison of the distribution of recent records of Arabian Red-legged Partridge with those of Philby's Rock Partridge in North Yemen (*Figure* 1) shows that both species occur on the highland plateau. Closer examination of the individual site details indicates that there may be a degree of altitudinal separation. However, the two species have been recorded together at the same locality on at least one occasion (M. I. Evans *pers. comm.*). While Philby's Rock Partridge is restricted to the highland plateau, the majority of the Arabian Red-legged Partridge sites are located in the wetter and more fertile western ramparts, and a further two sites are in the Tihamah foothills. Neither species has been recorded from the eastern flanks of the highlands or the interior desert in Yemen but M. C Jennings (*pers. comm.*) has recorded Arabian Red-legged Partridge just east of the highland plateau in Saudi Arabia.

RANDS, M. R. & RANDS, G. F. 1987. The Arabian Red-legged Partridge in North Yemen. *Sandgrouse* 9: 69-73.

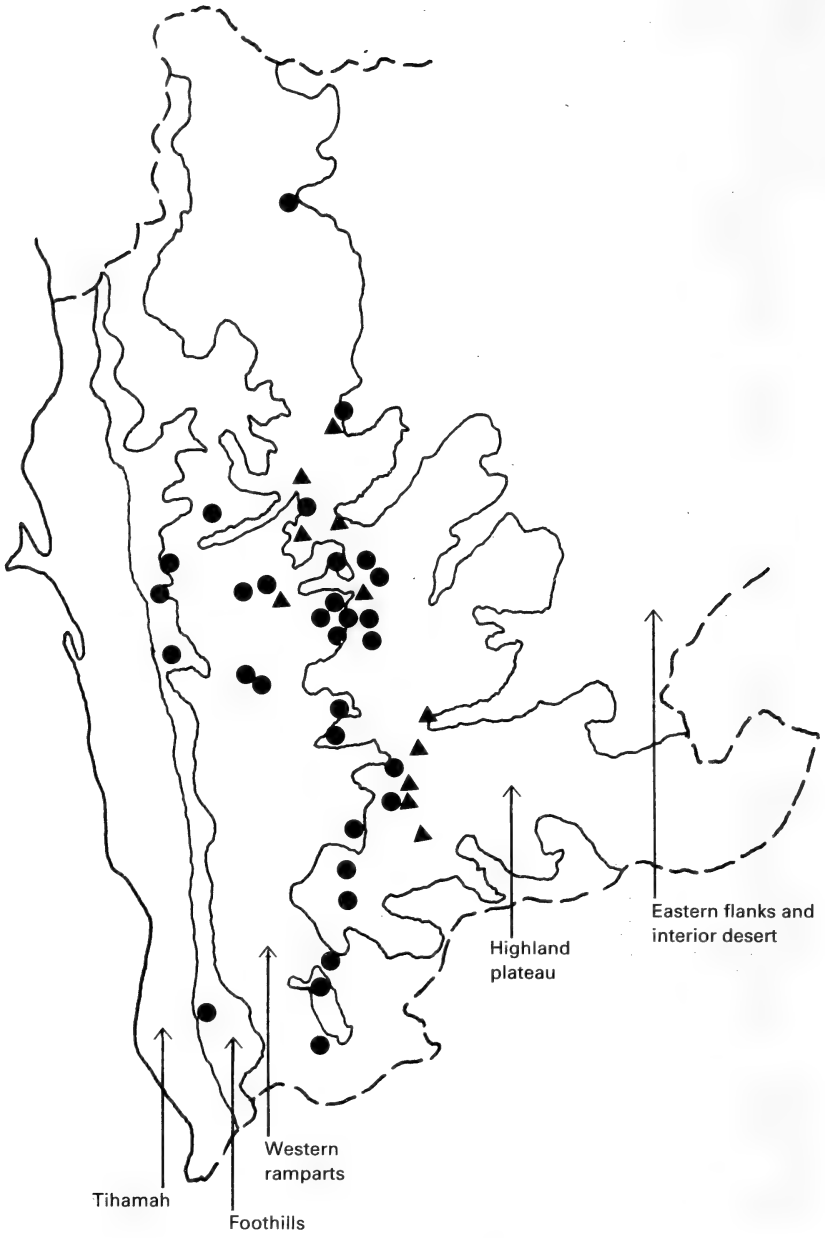

Figure 1. Recent distribution of Arabian Red-legged Partridge (●) and Philby's Rock Partridge (▲) in North Yemen, from sites recorded by Brockie (1985), Cornwallis and Porter (1982), Phillips (1982), Beaman and Madge (1980), M. I. Evans *pers. comm.* and the OSME Expedition.

TABLE I. SIGHTINGS OF ARABIAN RED-LEGGED PARTRIDGES IN NORTH YEMEN IN AUTUMN 1985

Alt. (metres)	*Location*	*Grid ref.*	*No. of birds*	*Habitat*
300	36 km. E of Al Mukha	346-1475	8; 4	Rock and gravel plain with small hills, scattered trees and shrubs, sparse patchy cultivation.
250	30 km. N of Bajil	315-1691	1	Rocky foothills with scattered trees (*Dobera, Acacia*), shrubs and succulents.
700-800	Jabal Bura	333-1645	1 (H)	Mountain slopes with *Acacia* and *Commiphora* underlain by varied shrub and ground flora.
1,250	33 km. SSW of Ta'izz	387-1477	7	Steep slopes with occasional trees, *Euphorbia* and shrubs; wadi bottom with dense riverine trees.
1,370	14 km. NE of Ta'izz	403-1510	4; 3	Rocky slopes with *Euphorbia* and *Acacia*, occasional shrubs and herbs.
1,800	34 km. SE of Sa'dah	376-1851	2	Wide stony wadi bed with clumps of *Acacia* and ocasional *Ziziphus*; rocky hillsides surrounding.
1,850	1 km. W of Al Mahwit	343-1711	3; 2; 1	Steep terraced slopes with sorghum and grass; scattered tall *Acacia* and occasional *Olea*.
1,860	25 km. SW of Yarim	419-1565	6	Boulder slopes with shrubs, dense grass and succulents; scattered *Acacia* in ravine.
2,800	Sumarah Pass	427-1572	2	Steep boulder scree with shrubs and patches of herbs; cultivation terraces.
2,600-2,800	Cliffs above Shibam	383-1715	8; 7; 5; 5; 4; 2; 2 (H); 1; 1; 1 (H)	Rocky hillside with grasses and herbs, scattered *Acacia* and rose bushes; cliffs above.

N.B.: (H) denotes heard only

HABITAT

The species was recorded in a wide variety of highland habitats as well as in the foothills on the edge of the coastal plain. Details of the habitat at each site are given in TABLE I. All sightings were on quite stony ground, usually with less than 30 per cent vegetation cover and scattered trees. The birds were often close to cultivation, most frequently the terraces on which cereals were growing. The Expedition's observations, together with those of M. I. Evans (*pers. comm.*), suggest that, in North Yemen at least, this species prefers more fertile and productive ground than Philby's Rock Partridge.

FOOD

Birds were seen actively foraging on four occasions, all in the Shibam/Kawkaban area. Two coveys (one of five adults, another of eight) were seen moving uphill as loose flocks feeding on grass seeds taken from standing stems, material picked up from between boulders and the leaves of unidentified bushes. On another occasion, four adults were seen moving towards a presumed roost site and one of them ate grass seeds from between stones. The last observation was of a bird picking off and eating three or four rose hips from a *Rosa abyssinica* bush, climbing to a height of one metre before being disturbed.

Guichard and Goodwin (1952) report the species feeding in South Yemen at grain-threshing areas near human habitation and on the small bulbs of a sedge. There is no other published information on the feeding behaviour or food of this species.

BREEDING

There was no evidence in November 1985 that breeding had taken place since August at least. Birds seen were apparently in family parties (TABLE I) which indicates that breeding would be unlikely to have started again before February.

Sclater (1917) refers to "chicks" which were collected on 4 August 1913 soon after hatching. Phillips (1982) recorded "coveys of about 15" during the autumn in North Yemen, while Cornwallis and Porter (1982) saw at least four adults in late April. Brockie (1985) noted three separate pairs in February, and M. I. Evans (*pers. comm.*) reports pairs in April and July and adults with distinguishable young in July and September.

In Oman and South Yemen breeding commences in March (Gallagher & Woodcock 1980; Guichard & Goodwin 1952). Watson (1962) suggests that the Arabian Red-legged Partridge breeds about a month later than Philby's Rock Partridge, but our observations on the latter species suggest that this is not so in North Yemen (Rands 1987).

CONSERVATION AND INFLUENCE OF MAN

The Arabian Red-legged Partridge does not appear to be threatened by habitat destruction and the stony areas in which it occurs are unlikely to be destroyed or developed. A major cause of population decline for both the Red-legged Partridge *A. rufa* and the Grey Partridge *Perdix perdix* in Europe is chick starvation, due to the reduction of chick food supplies resulting from the application of herbicides and insecticides to cereal fields (Rands 1985; Potts 1986). Pesticide use in North Yemen is, as yet, unlikely to affect the Arabian Red-legged Partridge but the importation of such agrochemicals is now rapidly increasing (S. Robinson *pers. comm.*).

The other potential threat to both species of partridge in Yemen is over-hunting. We saw no evidence of this, although Sclater (1917) reported widespread persecution of Arabian Red-legged Partridges in the early part of the century, and hunting and trapping of some birds (for subsequent sale in suqs) still occurs (M. I. Evans *pers. comm.*, F. Stone *pers. comm.*).

In conclusion, the species is at present under no immediate threat from habitat change or hunting in Yemen. However, since it is one of the most morphologically discrete of the Arabian peninsula's endemic bird species, it deserves careful monitoring in future.

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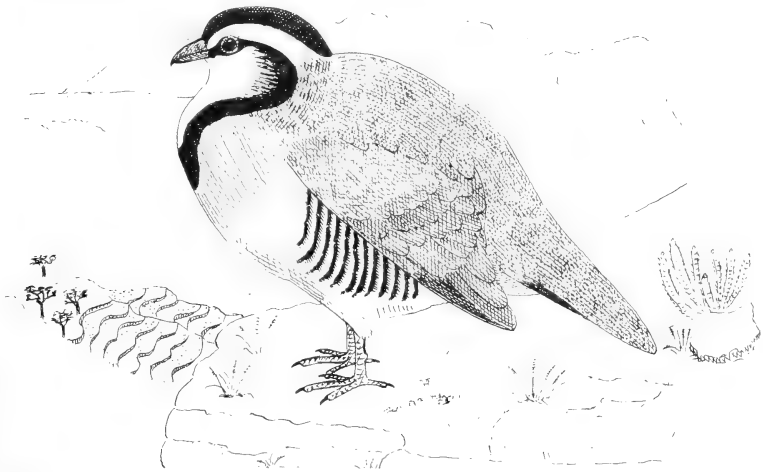

Arabian Red-legged Partridge *Alectoris melanocephala* S. Christensen

THE ARABIAN WOODPECKER IN NORTH YEMEN

by

M. J. Everett

INTRODUCTION

The Arabian Woodpecker is endemic to south-west Arabia and is the only true woodpecker found there. When it was first described Kinnear and Bates (1935) named the new species *Desertipicus dorae*, but Meinertzhagen (1954) rejected their new genus and renamed the bird *Dendrocopos dorae*. Short (1982) includes the Arabian Woodpecker and the other Old World *Dendrocopos* species in *Picoides*, but Cramp (1985) favours *Dendrocopos* for Old World species on the basis of differences in, for example, behaviour, colour pattern and absence of marked size dimorphism. Further studies are required to determine the taxonomic position, but the plumage, head shape and bill shape of Arabian Woodpecker suggest that *Picoides* may be preferable for this species.

This paper is based on data collected during the OSME Expedition to North Yemen in autumn 1985 (see Rands *et al.* 1987).

DESCRIPTION

The Arabian Woodpecker is basically brown above with paler brown or brownish-white underparts. Rows of white spots (more or less forming bars) are present on the greater coverts and on the noticeably dark primaries and secondaries; the tail is dark brown, with white spots on the two outer pairs of feathers. In the field, the wing-markings can be surprisingly inconspicuous, especially in bright sunlight. Head colour varies from mid to pale brown: this may indicate seasonal wear or fading. Birds seen during the Expedition (presumably post-breeding) had rather pale heads. Males have a red patch on the rear crown and nape (usually fairly obvious in the field); this is less extensive and more orange-red in immature males and is absent in females. The abdomen is noticeably darker than the breast, with a dull red or pinkish-red patch in the centre of the belly which again varies with age but is present in both sexes. This, however, can be difficult to see in the field.

Short (1982) provides a comprehensive description, based on skins, and both he and Meinertzhagen (1954) include useful colour plates.

VOICE

This is imperfectly known and comments in the literature are sparse. Meinertzhagen (1954) mentions only "a fairly loud *ka ka ka*", probably a direct quote from Bates (1937), who describes the same call, but says it is "not very strident". King's (1978) description of what he terms the "rattle call" is fuller: "It was uttered sporadically, usually at least 30 minutes between calls. Rattle call high-pitched, somewhat metallic, piping series of 15-20 *hack* or *wuck* notes uttered rapidly, speeding up and becoming lower in pitch". Meinertzhagen (1954) also noted rather weak drumming.

Expedition records obviously refer to King's "rattle call", or variants of it. This call was heard quite often at Al Mahwit. A male gave this call (described as loud and "laughing") and a female nearby answered with a shorter version of the same call. Later, a male gave this call again and was joined by a second male, which uttered the same call as it flew in. The female mentioned above produced a feeble, rather dry "*chrrrt . . . chrrrt*" while in one small tree and repeated this while flying 40 metres to another tree.

EVERETT, M. J. 1987. The Arabian Woodpecker in North Yemen. *Sandgrouse* 9: 74-77.

STATUS AND DISTRIBUTION

Expedition records and those of previous observers suggest that the Arabian Woodpecker is locally common in North Yemen. In 1985, birds were seen as follows: up to ten near Al Mahwit (1,600-1,850 metres), one at Sana (2,300 metres, near Hddah), one 17 km. south-west of Ma'bar (2,100 metres), four 10 km. south-west of the Sumarah pass (c. 2,130 metres) and one on the slopes of Jabal Bura' (1,680 metres). A recently-used nest hole was found 34 km. south of Sa'dah (1,680 metres). Cornwallis and Porter (1982) collated previous records which came from eight or nine widely separated localities in the highlands between about 1,000 and 2,400 metres, and the species has been seen up to 2,800 metres (M. I. Evans *pers. comm.*).

Jennings (1981; *pers. comm.*) has mapped the distribution in Saudi Arabia, where the bird is believed to be a common resident from approximately 26° 15′ N through the Tihama, Hejaz and Asir regions south to the North Yemen border, from near sea-level to the summits of the highest mountains.

The species occurs in at least the western part of South Yemen (Meinertzhagen 1954), but almost nothing is known of its distribution there.

HABITAT

Expedition observations support those of other, earlier observers in south-west Arabia and confirm that the Arabian Woodpecker occurs mainly in relict, acacia-dominated woodland, which in North Yemen survives best in mountain wadis – often in association with cultivated terraces. The Expedition did not visit the one known area of juniper forest in North Yemen: the birds occur in this habitat in Saudi Arabia. The unique endemic forest on Jabal Bura' may represent the original habitat of the Arabian Woodpecker: if this is so, the relict woodland elsewhere, with its scattered trees and associated cultivation or grazing and continuing felling and lopping, is a secondary habitat, but one in which the birds must have lived for centuries.

FOOD

Precise information is lacking; Meinertzhagen (1954) describes stomach contents being mainly "a large grub which is excavated from under the bark of acacia" and also saw birds feeding on small insects, probably aphids, on the surface of *Asclepias*. Observations during the Expedition, mostly of birds foraging and feeding on acacias in a steep-sided wadi near Al Mahwit and on *Acacia origena* near the Sumarah pass, confirm the view of Short (1982) that Arabian Woodpeckers both "tap and glean", finding food in crevices and under bark, but also taking it from the surface. The main food is presumably arboreal insects and other invertebrates and their larvae. Whether any vegetable matter is eaten (this seems likely: *cf.* other *Dendrocopos/Picoides* woodpeckers) is unknown.

BREEDING

There are no published accounts of the breeding cycle, which remains almost wholly unknown; the eggs have not been described. Meinertzhagen (1954) mentions finding nest-holes in acacias and *Capparis*, including three in a single tree, and M. C. Jennings (*pers. comm.*) has recorded nest-holes in soft pithy trees (e.g. *Hyphaene thebaica*, *Dracacua serrulata* and *Pandanus odoratissimus*) or in the rotten dead stems of hardwoods such as *Acacia*. Short (1982) speculated that in Saudi Arabia the breeding season is probably February-April.

Evidence of breeding was found twice during the Expedition. At Al Mahwit, on 11 November, an apparently fresh hole of typical *Dendrocopos* appearance, but smaller than that of Great Spotted Woodpecker *D. major*, was found in the stump of a large dead branch of *Acacia origena* about seven metres above ground.

During an 80-minute watch, a male woodpecker arrived at the hole, with its bill slightly parted as if it had a crop full of food. It poked its head into the hole several times and (eight

minutes after arriving) entered and disappeared; no nestling noises were heard. The bird did not reappear. Unfortunately further observations were not possible, so the record remains frustratingly inconclusive – though it could perhaps indicate November breeding.

The second record concerns a nest-hole found on 16 November in a flat-bottomed, broad wadi with acacia scrub and scattered small trees 34 km. south of Sa'dah; this was the Expedition's most northerly record for the species. The hole was in the main stem of a very stunted, much-lopped live *Acacia*, only 1.5 metres above the ground; it looked recent and contained a few wisps of whitish down (adhering to the inner rim of the hole). There was an 'apron' about 5 cm wide and 10 cm deep beneath the hole – typical of the often conspicuous claw marks beneath a *Dendrocopos* nest hole which contains an active nest or has been in recent use (*pers. obs.*). It seems likely that this nest was used in 1985. No birds were seen at this site.

ACTIVITY

To what extent wood is excavated or chiselled open by foraging birds is unclear. King (1978) found 'diggings' in many wadis in Saudi Arabia, but scarcely any were found during the Expedition and obvious, physical evidence of feeding woodpeckers, even on dead limbs, was conspicuously absent at Al Mahwit, where perhaps ten different individuals were watched. Expedition observations showed that the birds forage slowly and deliberately, picking and probing around dead branches and pollarded limbs, in crevices and holes in live wood and around the characteristically loose and flaky bark of many acacias, especially *Acacia origena*. One bird was noted as "nimble and acrobatic – often upside down and going out along the undersides of branches". Prolonged, deliberate hammering was noted on only one occasion. The physical appearance of the bird suggests that it is not a particularly powerful woodpecker. At Al Mahwit birds were hardly ever located by the sound of them tapping on wood: they produced little sound even when they were watched tapping.

At Al Mahwit, a pair (located initially by a continuous tapping sound) fed in a sorghum terrace, near scattered acacias, on a 45° slope. Both were feeding at the bases of mature sorghum (1-1.5 cm. thick at the base), remaining in one position for minutes at a time and picking at different parts of the stem simply by adjusting the position of the head and bill. Insects or larvae were presumably the intended prey. R. F. Porter (*pers. comm.*) watched a bird feeding on the ground in April 1979.

Observations at Al Mahwit and near the Sumarah pass mention birds remaining motionless and inactive for several minutes at a time, but this is probably not significant since it is a trait shared by other woodpeckers – it may, however, cause the bird's presence to be overlooked. At the Sumarah pass, two males and a female were seen to intersperse bouts of foraging with periods of preening.

Meinertzhagen (1954) mentioned the tameness of some individuals and the "wildness" of others. During Expedition observations at Al Mahwit, some birds were exceptionally unapproachable while others were almost ridiculously tame.

Short flights between trees were more or less direct, but birds flying longer distances showed the characteristic bounding action typical of other woodpeckers.

CONSERVATION AND INFLUENCE OF MAN

The Arabian Woodpecker clearly depends for its survival in North Yemen on the continued existence of mature, open, acacia-dominated relict woodland in the upland wadis: only major changes in local farming practice, involving extensive felling, seem likely to prejudice its future – it appears to be an adaptable species, able to withstand present levels of lopping, at least where there are plenty of trees. One of the many reasons for preserving the Jabal Bura' forests is that these possibly represent the last example, in North Yemen and perhaps in all south-west Arabia, of this bird's habitat in its original form.

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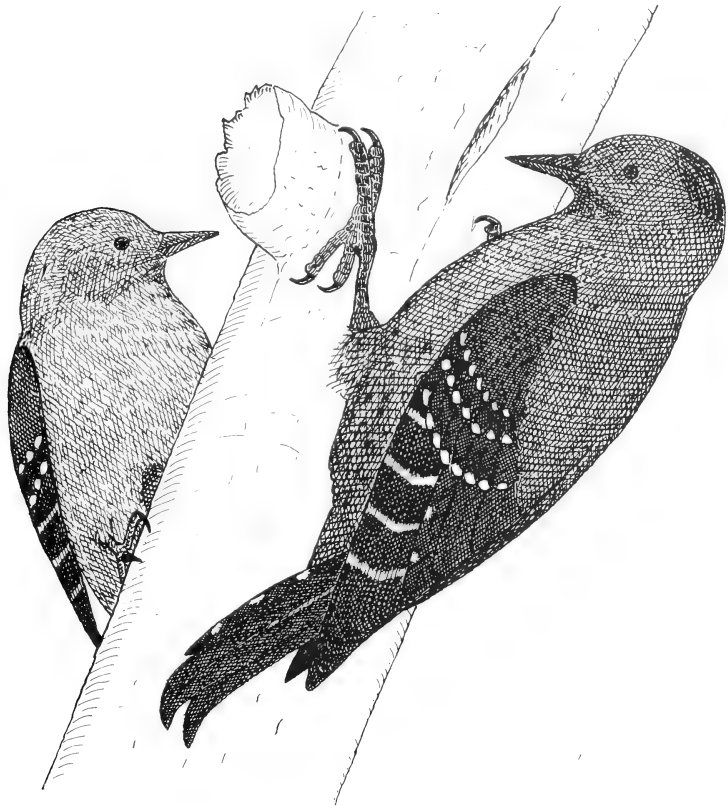

Arabian Woodpecker *Dendrocopus dorae* S. Christensen

THE ARABIAN ACCENTOR IN NORTH YEMEN

by

N. J. Redman

INTRODUCTION

The Arabian Accentor *Prunella fagani* is the only true Yemeni endemic, having never yet been recorded outside North Yemen and South Yemen. It is exclusively montane, occurring up to 3,000 metres in the central highlands. Although poorly known, it shares many similarities with other members of its genus.

This bird has been subject to a chequered taxonomic history. It was originally described as a full species by Ogilvie-Grant (1913) who considered it to have no very close ally. This view was echoed by Sclater (1917). Subsequently it has been variously considered conspecific with Brown Accentor *P. fulvescens* (Ripley 1952) and/or Radde's Accentor *P. ocularis* (Ripley 1964), and even Black-throated Accentor *P. atrogularis* (Meinertzhagen 1954). It is now usually given full specific status again (Voous 1977) and may be regarded as forming a superspecies with *P. ocularis* and *P. atrogularis* (but not *P. fulvescens*). For further discussion on the taxonomic relationships of these accentors see Marien (1951) and Lees-Smith (1986). However, since the morphological characters of *P. fagani* and *P. ocularis* differ only marginally and, as yet, there is no evidence that song, behaviour and habitat are significantly different, there must remain some doubt that *P. fagani* is a valid species.

DESCRIPTION

Size and shape similar to Dunnock *P. modularis* and, especially, Radde's Accentor. Adult male has grey-brown crown with indistinct dark brown streaking and ill-defined dark brown lateral crown-stripes; broad, prominent whitish supercilium extending to rear of ear-coverts; prominent whitish sub-moustachial stripe, not joining supercilium; dark grey-brown ear-coverts forming well-defined patch. Mantle brown with prominent broad blackish or dark brown streaks, and rump brown and unstreaked. Wings dark brown with brown and buff fringes, tail brown. Chin and throat whitish with brownish spots at sides; breast buffy or orange-buff with variable brown streaks, especially at sides of breast and on flanks; belly paler, usually pale buff. Adult female very similar to male but generally duller; often has less orange on breast and paler brown ear-coverts giving a less striking head pattern. First winter similar to female but with heavier streaking on underparts. Juvenile grey-brown above, rather mealy and 'moth-eaten'; indistinct grey-buff supercilium, indistinct moustachial streak and finely streaked underparts (R. F. Porter *pers. comm.*). Iris muddy-brown or chestnut-brown; bill grey-brown or dark grey with base of lower mandible horn or pinkish; legs yellow-flesh or pink. Biometric data for five birds netted during the OSME Expedition in 1985 (see Rands *et al.* 1987) are as follows (lengths are in mm, weight in grams):

Date	*Location*	*Age*	*Wing*	*Tail*	*Tarsus*	*Bill to feathers*	*Bill to skull*	*Bill width*	*Bill depth*	*Weight*	*Primary moult score*	*Brood patch*
5/11	Sumarah Pass	juvenile	72	—	21.6	10.1	15.9	4.9	4.5	24.3	43	none
17/11	Sumarah Pass	full grown	—	62.0	21.0	9.8	14.8	5.3	4.2	20.0	0	none
17/11	Sumarah Pass	full grown	66	62.0	20.6	10.2	16.3	5.2	4.3	21.8	33	none
17/11	Sumarah Pass	full grown	70	66.5	22.5	10.0	16.3	5.5	4.6	22.7	0	none
3/12	Kawkaban	full grown	73	70.0	21.8	10.2	14.9	5.5	4.8	23.2	0	none

REDMAN, N. J. 1987. The Arabian Accentor in North Yemen. *Sandgrouse* 9: 78-81.

Radde's Accentor is very similar to Arabian but (in adult male) crown darker and unstreaked, ear-coverts darker and supercilium whiter, giving more striking head pattern; orange-buff breast-band better defined and richer in colour; underparts virtually unstreaked with less spotting on sides of throat. Brown Accentor is similar to both species but generally has paler brown crown, faintly streaked, and paler ear-coverts giving a less striking head pattern than Radde's; upperparts paler grey-brown but heavily streaked; underparts entirely unstreaked with more extensive orange-buff.

VOICE

The song of Arabian Accentor is rather thin and weak, and not dissimilar to that of its close relatives; it is delivered in erratic bursts from a favoured song-post such as a rock or the top of a small bush, but occasionally from a low tree. Song duration is short, often 2-3 seconds with up to five songs per minute. When singing the wings are held very slightly open and drooped, and the tail 'shivered'. Songs may be transcribed as "*swee diddle-ee oo*" or "*doo dee di di doo*" (R. F Porter *pers. comm.*). Calls were heard frequently: rather like a Dunnock's typical call, but somewhat quieter and less insistent. They were usually uttered singly or in a series of three (a high-pitched "*pee-pee-pee*"; occasionally in a series of four or six.

STATUS AND DISTRIBUTION

Arabian Accentor is so far known only from a handful of localities, mainly in North Yemen. During the Expedition, in October and November 1985, it was only found at three sites. Most observations were at Kawkaban and the Sumarah Pass, at altitudes of 2,600-3,000 metres. A single bird was also recorded near Ibb at 2,000 metres. The only other recently recorded localities have been Manakhah (2,200 metres) and the head of Wadi Bana (2,550 metres) (Beaman & Madge 1980; Phillips 1982). There are no records below 1,850 metres. In North Yemen the species ranges from Kawkaban in the north, south to Jabal Sabir near Ta'izz. The inaccessible nature of the highlands is undoubtedly a prime cause of its poorly known distribution which, although localised and isolated, is likely to be more widespread than current records suggest.

So far as is known, the Arabian Accentor is largely resident. Two specimens taken in 1923 twelve miles north of Habil in South Yemen appear to be the only evidence in support of the theory that the species straggles to lower elevations in winter (Meinertzhagen 1954). Some Radde's Accentors, however, are known to undertake regular short-distance migrations in winter from their breeding grounds in the Turkish-Iranian highlands (Marien 1951), regularly at least as far south as northern Israel (Paz 1987) and once to Masirah Island, Oman, in November 1975 (Gallagher & Woodcock 1980).

HABITAT

During the Expedition, birds were recorded exclusively in rocky, sparsely-vegetated, montane habitats including scree slopes, cliff faces and terraced fields. At Kawkaban they were occasionally observed in low *Acacia* trees and also on aloes *Aloe*, the shrubby dock *Rumex limoniastrum* and the wild rose *Rosa abyssinica*, but they kept mainly on the ground or on rocks. On the Sumarah Pass, a number of birds favoured the terraced hillsides, always keeping close to the ground and frequently seeking cover in *Acanthus arboreus* which grew in profusion on the rocky walls bordering the ploughed fields. Scattered acacia trees and rose bushes were absent from this site. On one occasion here, several birds were gathered around a wrecked car, often venturing into its interior.

FOOD

Several individuals were observed to feed on both insects and seeds, taken mainly from the ground. One bird was seen eating grass seeds from a seed head. The species has also been recorded eating seeds of wild rose, breaking open hips which had fallen to the ground (Meinertzhagen 1954).

BREEDING

No direct evidence of breeding was recorded during the Expedition. One juvenile seen at Kawkaban in October was considered to have been hatched in about July. Adults were singing on a number of occasions at this site in October and November (but also in March 1982 and December 1983, R. F. Porter *pers. comm.*). A male following a female around while 'wing-flicking' was the only indication of possible courtship. Some territorial behaviour by the same male was also noted when he chased off another male on two occasions.

Subsequent to the Expedition, the first documented nest was found at Kawkaban on 9 April 1986 (Martins 1986). The nest-cup was constructed of fine herbs lined with chicken feathers and woven onto an untidy platform of small twigs. It was situated in a dense thorny shrub about one metre above the ground and contained three pulli estimated to be about seven days old. From this it would appear that Arabian Accentors are spring breeders. The nest and site were considered to be very similar to that of a Radde's Accentor found in Turkey in late May 1983 (R. P. Martins *pers. comm.*).

ACTIVITY

Birds were usually seen singly or in pairs, but occasionally in small parties. Notably, a loose flock of up to 13 was observed on the Sumarah Pass on two occasions in November. Like other members of its family, this species is typically rather unobtrusive, but is constantly flicking its wings as it moves around on or close to the ground.

CONSERVATION AND INFLUENCE OF MAN

Much of the habitat of Arabian Accentor is inaccessible and thus remote from possible interference by man. Although the species will readily feed in and around cultivation, it is unlikely that it is particularly dependent on this. At present there are no threats to this bird, despite its restricted range and fairly low-density population. Further fieldwork is needed to determine more precisely its range and numbers.

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Arabian Accentor *Prunella fagani* S. Christensen

THE SOUTH ARABIAN WHEATEAR IN NORTH YEMEN

by

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INTRODUCTION

This paper is based on observations in October–November by the OSME Expedition to North Yemen (see Rands *et al.* 1987) on the race *lugentoides* of the Mourning Wheatear *Oenanthe lugens*, which, together with the very similar race *boscaweni*, is resident in the mountains of southern Arabia. These two races, referred to jointly as the South Arabian Wheatear (or *lugentoides* group), differ rather distinctly from the three Palaearctic races (the *lugens* group: *halophila*, nominate *lugens* and *persica*). South Arabian Wheatear may be an incipient species, but the *lugubris* group of three East African races (*vauriei, lugubris* and *schalowi*) is even more clearly differentiated from the Palaearctic *lugens* group. For discussions and reviews of the systematics, see Vaurie (1949) and Hall and Moreau (1970).

DESCRIPTION

The male resembles males of the *lugens* group, being basically a black and white bird. Back, wings, sides of neck and face, and chin to upper breast are black. Forehead, crown, nape, rump, and underparts from lower breast downwards are white, vent and undertail-coverts having an orange-rufous wash which is variable in intensity; the crown is variably streaked pale to blackish-grey, sometimes conspicuously, but many in November and December were not very dark-streaked, often just washed dirty greyish, and the crown can be pure white. Tail pattern is the normal wheatear one: white, with largely black central feathers and terminal band. In flight the upperwing shows a conspicuous white patch on the basal half of the primaries. The appearance of freshly moulted males is not known, but certainly by October there no prominent pale fringes on the upperparts and wings. Differences from the *lugens* group are as follows: crown often distinctly streaked or mottled blackish (never so in *lugens* group, though both can have crown pale greyish); white on nape often less extensive; black on upperparts more extensive, with white area on lower back narrower; black on throat and neck-sides slightly more extensive, reaching upper breast, and connection with black wings broader; orange wash on vent often stronger; white patch on upperwing restricted to basal half of primaries (almost reaches tips in nominate *lugens* and *persica*, though practically absent in *halophila*) and not normally extending onto outer secondaries (unlike many birds of *lugens* group); black tail-band generally rather broader and extending a little upwards on outermost feathers (but this is approached by *persica*). As in the East African races (also non-migratory), the wing is shorter and more rounded than in the wholly or partially migratory *lugens* group of the Palaearctic. Similarly, South Arabian Wheatear and the East African birds have the 2nd primary shorter than the 6th, whereas the reverse is true in the *lugens* group (Vaurie 1949). South Arabian Wheatear is rather more thickset than the *lugens* group.

Unlike the two Middle Eastern races of *O. lugens* (nominate *lugens* and *persica*), but like those of north-west Africa (*halophila*) and East Africa (the *lugubris* group), the South Arabian Wheatear has distinct sexual dimorphism. The female lacks the male's black, being basically drab earthy brownish-grey above, with darker flight-feathers; ear-coverts warm dark rufous-brown. Underparts off- or dirty white, usually with variable diffuse soft greyish streaks on throat or on sides of breast or belly; vent, undertail-coverts, rump and tail as in male. No white at

EVANS, M. I., CHRISTENSEN, S. & BROOKS, D. J. 1987. The South Arabian Wheatear in North Yemen. *Sandgrouse* 9: 82-86.

base of primaries though this area appears translucent silvery-greyish on upper surface. Upperparts darker and drabber than female *halophila*, and ear-coverts usually warmer rufous-brown. A freshly moulted bird on 2 September had pale-fringed flight-feathers (MIE).

Juveniles also appear to show sexual dimorphism. Males are sooty-black or dark charcoal-grey above, with crown and nape only slightly paler and browner; underparts dirty white; vent and tail-coverts as adult, but flight-feathers are browner. Female has ill-defined ginger or cinnamon lores, supercilia and ear-coverts, sometimes the whole top of head; upperparts (sometimes including crown and nape), throat, breast and flanks dark charcoal-grey; belly paler but mottled, paler still towards orange-tinged vent; flight feathers and coverts very dark ginger-brown. The latest record of juvenile plumage is 20 September (MIE).

VOICE

A female has once been seen in full song, on 6 September (MIE), though otherwise only males are known to sing: a typical wheatear warble of short, scratchy, musical phrases uttered from a perch or on the ground (R. F. Porter); a loud bubbling, whistled warble with phrases of 6-20 notes (King 1978). Breeding males use several song-posts, e.g. stretching along 50-70 metres of cliff, and they may sing as they fly between them (MIE). A subsong was given sporadically in October-November; a varied, low, short and sweet warbling with a thin reedy quality, and Walker's (1981) description of the song in Oman (a quiet, pleasant "*dweet twa weedle dit*") probably refers in fact to subsong. The call heard by King (1978) was a repeated, raspy "*kaak*", interspersed with a high-pitched, musical "*seek*" or "*week*", and MIE has heard similar sequences from an anxious female with young. Gallagher and Woodcock (1980) record a disyllabic, grating, staccato "*krik-krik*" or "*chzak-chzak*" when defending young, accompanied by bowing, tail-raising and wing-flicking. Walker (1981) describes a low, harsh "*zeeb*" or "*dree*" in alarm, and MIE has heard a scolding "*shrrr*" – also, from a male being violently attacked by a Red-breasted Wheatear *O. bottae* (see Activity, below), a high-pitched, plaintive piping.

STATUS AND DISTRIBUTION

O. l. lugentoides is a common resident in the mountains of south-west Arabia from Taif (c. 21°N) in Saudi Arabia, through North Yemen to the adjacent part of South Yemen; *boscaweni* occupies southern Arabia east to Dhofar in western Oman and including the Hadramawt of central South Yemen (Meinertzhagen 1954; Jennings 1981a; Walker 1981), but it is not clear whether the distribution of the two races is continuous.

In North Yemen, South Arabian Wheatear is widespread through the highlands, and has been recorded down to 1,000 metres in the western ramparts (MIE) and to 1,100 metres on the eastern flanks (Expedition data). The Expedition's observations stretched from Jabal Umm Laylah (near Sa'dah) in the north to Ibb in the south, and from Wadi Nawiyah (near Al Mahwit) in the west to Ma'rib dam in the east. From March to early September MIE has recorded it up to 3,000 metres (but not above) – and down to 1,000 metres in the western ramparts and to 1,600 metres on the eastern flanks. In October-November the corresponding Expedition records were 3,500 metres (near the tops of the highest mountains), 1,100 metres and 1,100 metres. If this apparent winter extension of range upward and, in the east, downward, is real, the South Arabian Wheatear seems to differ from most other North Yemen altitudinal migrants, which seem to move mostly downwards in winter (Brooks *et al.* 1987). In western Oman (where there is little ground above 1,000 metres), Walker (1981) indicates that it occurs down to c. 500 metres, perhaps lower.

HABITAT

The Expedition found birds mainly on dry and rocky ground, often sloping or even cliffy, but including terraces, sparsely-grassy hillsides, wadis vegetated with *Acacia*, and plateaux, frequently near stone walls and earth banks along roads. Over the c. 45 km. between Shibam

(2,600 metres) and Al Mahwit (1,900 metres) 49 birds were counted, mainly along the roadside; they were most common in the higher, barer, dry and rocky areas along the first two-thirds of this route, becoming considerably less common towards the more fertile region of Al Mahwit. MIE has, however, found birds common in some of the misty, green areas of the western ramparts where there is also bare, open ground. Cornwallis and Porter (1982) found that the habitat often contained bushes and trees used for perching on and singing from, and that 78% of the 86 individuals or pairs they studied were in areas with hillsides and flattish ground adjacent to one another. That both types of ground are important is suggested by their observation that at one such site a male of one pair watched continuously for 155 minutes spent only 34% of his time on the more level ground but carried out 96% of his 56 feeding sallies there. Using different divisions, MIE has classified the habitats of 145 individuals seen from July to September: only two birds were on flat habitats – one on an agricultural plain, one on a montane plateau; the bulk were from rocky or stony hillsides over 30 metres high (56%) and terraced hillsides over 30 metres high (30%); also from cliffs over 2 metres high (8%) and stony hills less than 30 metres high (5%). During the breeding season, four individuals or pairs which seemed to have nests or just-fledged young were all closely associated with cliffs (MIE).

FOOD

Most foraging is done on or near the ground, birds typically perching on a rock and then dropping down to pick up prey. They also hop restlessly among small rocks or short vegetation (but do not investigate the ground methodically like Red-breasted Wheatear), sometimes chasing prey by a low flutter over the ground and usually returning to a perch. Sometimes they adopt a method more like the typical one of Pied Wheatear *O. pleschanka*, making sallies to the ground from an exposed lookout and often returning to the same perch; in one half-hour watch there was 3-5 minutes between each such flight. Hidden perches, e.g. low in an *Acacia*, are also used. MIE has recorded an adult eating a smooth caterpillar c. 3 cm long, and three times seen adults eating berries, taking them directly from the plant – wild olives *Olea chrysophylla* and red berries from a juniper-like bush; food seen to be carried by adults (presumably for nestlings) comprised large white larvae, a small black beetle and small red berries. The species has also been recorded taking a 'sun spider' (Solifugae) in Saudi Arabia (M. C. Jennings *pers. comm.*).

BREEDING

The nest and eggs of South Arabian Wheatear seem not to have been fully described in the literature (but see Jennings 1981b), though breeding appears to be mainly in spring and early summer: full song is given mainly from March to May, a female was seen carrying a down feather to a cliff on 13 June, a female probably incubating was seen in April, birds have been seen carrying food on 25 and 27 April, 24 June, 30 June, 20 July and 6 September, juveniles have been recorded from 23 May, and agitated or anxious behaviour (by lone females or pairs, never lone males) has been seen from May to August (Cornwallis & Porter 1982; MIE). Full song and 'display' have been recorded also in September, and apparent pairs are seen in winter (Phillips 1982; MIE), but the Expedition found no indication of breeding in October and November. S. Fairman (*in litt.*) reports recently fledged young on 29 March and Jennings (1981b) describes a nest containing young found on 21 April in south-west Saudi Arabia.

ACTIVITY

Birds are most frequently seen perched on rocks or some other lookout. The Expedition sometimes recorded several birds within a small area and, though aggression did occur, three males and a female were once seen to spend a peaceable half hour within 2 metres of each other. Aggressive interactions, primarily between males, included chasing, tail-flicking and

brief fighting, though fights were never fierce or prolonged – as can occur between wintering Finsch's Wheatears *O. finschii* (SC). MIE has observed inter-male aggression also in June, July and September. During October-November aggression was seen towards Arabian Accentor *Prunella fagani* (once), Black Redstart *Phoenicurus ochruros* (twice), Chiffchaff *Phylloscopus collybita* (once), and Arabian Serin *Serinus rothschildi* (once), and MIE has noted it towards Long-billed Pipit *Anthus similis* in July. MIE has also seen a male attacked by a Red-breasted Wheatear: the latter pinned the South Arabian down with its feet and pecked its head fiercely for c. 30 seconds until it escaped. Perhaps due to their more cryptic plumage, females are seen much less often than males – even outside the breeding season when incubation cannot provide an excuse for their absence: of 91 adults recorded by MIE from October to February, 62% were males and 36% females (plus 2% unsexed).

CONSERVATION AND INFLUENCE OF MAN

As a mountain-living bird, often in thinly inhabited and less accessible regions, this wheatear does not appear much influenced by human activities. Perhaps the prevalence of heavy grazing and consequent reduction of vegetation actually favours it – as also may the presence of terracing (used for feeding if not too grown up) and of stone walls (used as perches and perhaps as nest sites).

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South Arabian Wheatear *Oenanthe lugens lugentoides* S. Christensen

THE YEMEN THRUSH IN NORTH YEMEN

by

C. G. R. Bowden

INTRODUCTION

The Yemen Thrush *Turdus menachensis* is a retiring species restricted as a breeding bird to the more dense natural montane vegetation of North Yemen and to south-west Saudi Arabia to latitude to 21°N. It may be more vulnerable to any further vegetation clearance than almost any other species of south-west Arabia due to its need for considerable cover at altitude.

Its taxonomic status is most unclear and in need of attention. The African and Olive Thrush *T. pelios* and *T. olivaceus* comprise a complex of forms with orange underwing-coverts which occurs throughout most of Africa. Hall and Moreau (1970) recognise *T. pelios* as a widespread paler lowland species and group a chain of allopatric montane forms under *T. olivaceus*. Where there is a series of isolated montane forms it is difficult to establish the degree of relatedness, the absence of range overlap allowing no possibility of interbreeding. Detailed comparisons of behaviour, voice and ecological requirements, in addition to morphology, are therefore necessary for a full assessment of taxonomic status.

Menachensis is the terminal outlier of the chain of montane forms (C. J. O. Harrison *pers.comm.*), but whether morphological and other differences are sufficient to justify treatment as a full species, or as a subspecies of *T. olivaceus* (e.g. Meinertzhagen 1954) remains unclear. There is also confusion for other forms in the series which are variously treated as species and subspecies e.g. *ludoviciae* from Northern Somalia. Until comparative fieldwork has been carried out on all forms, the question is unlikely to be resolved.

DESCRIPTION

The Yemen Thrush has the general appearance of a female Blackbird *T. merula* but is very slightly smaller and the general coloration is dull olive. The throat and breast are pale, heavily streaked dark brown. The belly is a paler, more plain olive-buff. Undertail-coverts are off-white, distinctly streaked dark olive. Underwing-coverts are bright orange-buff, similar to Song Thrush *T. philomelos* and there is also a tinge of orange on the otherwise olive flanks.

Leg colour varies from dull flesh to yellow, and bill from uniform dark brown to almost entirely bright yellow. This variation appears to be age related: juveniles have the brown bill, dull legs and buff tips to the otherwise dark olive greater coverts – age characters typical of several of the Turdidae. From a sample of six skins examined at the British Museum (Natural History), males have longer wing chords than females, and five with predominantly yellow bills comprised both sexes. Measurements taken from three birds caught by the OSME Expedition in 1985 (see Rands *et al.* 1987) are as follows (lengths are in mm, weight in grams):

Locality	*Date*	*Age*	*Wing*	*Tarsus*	*Bill to feathers*	*Bill to skull*	*Bill width*	*Bill depth*	*Weight*	*Primary moult score*	*Brood patch*
Shibam	7 Nov.	1st yr.	119	30.9	18.9	25.8	6.5	7.7	79	0	none
Shibam	7 Nov.	F.G.	120	29.9	19.1	26.5	5.8	7.2	72	0	none
Shibam	3 Dec.	F.G.	122	29.1	20.0	28.0	6.4	7.7	72	0	none

BOWDEN, C. G. R. 1987. The Yemen Thrush in North Yemen. *Sandgrouse* 9: 87-89.

VOICE

Calls include a low, mellow "*chuck*" recalling Blackbird, uttered periodically whilst foraging; a very high pitched thin note (M. I. Evans *pers. comm.*), a more harsh "*shee-ak*" like Ring Ouzel *T. torquatus* and a more metallic "*shrrrd shrrrd chuck*". Alarm call also similar to Blackbird alarm chatter, but shortened and speeded up.

Some song was also heard during the Expedition – it is rather desultory with thrushy warbling notes interspersed with thin high notes, harder urgent metallic notes and frequent pauses; reminiscent of Blackbird song but less fluty.

STATUS AND DISTRIBUTION

In North Yemen up to five birds were recorded at each of only six localities during the Expedition in 1985: Shibam/Kawkaban (5), Wadi Maytam (5), Wadi Duba (1), Al Mahwit (4), Sumara Pass (1), 5 km. east of Madinat ash Shirq (1). There are additional records in the vicinities of Sana'a (Cornwallis & Porter 1982) and Yarim (Phillips 1982), and specimens have been collected from Manakhah and Wasil (Sclater 1917).

The paucity of records indicates a sparse population in North Yemen. The only other records are from the highlands of the Asir region of Saudi Arabia, where Jennings (1981) describes it as a breeding resident of the juniper-covered highlands.

Yemen Thrush is strictly a montane species; Expedition records ranged from 1,200 to 2,900 metres, though most were between 1,800 and 2,000 metres *a.s.l.*

HABITAT

The species is found in areas with substantial tree or scrub cover at the higher altitudes. Such vegetation (e.g. *Acacia, Olea, Rosa*) is now almost invariably associated with watercourses at the lower altitudes concerned. It is utilised for foraging and provides cover in what may otherwise be bare rocky terrain or terraced slopes. Only once recorded in fields of qat *Catha edulis* (M. I. Evans *pers. comm.*) which is the other main vegetation type at these altitudes. In south-west Saudi Arabia it is common in juniper *Juniperus*.

FOOD

The bird often forages on the ground beneath dense *Acacia* scrub, presumably for invertebrates, sometimes tossing leaves aside in the manner of a Blackbird (also observed by Cornwallis and Porter 1982). Snails have been recorded in the diet and 'anvils' found by Phillips (1982). The fruits of *Olea chrysophylla* were taken in one locality and the hips of *Rosa abyssinica* were taken in three localities on several occasions.

BREEDING

There was no direct evidence of breeding during the Expedition's period in the field (October-December), and neither of the adults caught had a brood patch nor was in wing moult (see above). There was some song in November in late afternoon, but more was recorded by Cornwallis and Porter (1982) in late April, and by M. I. Evans (*pers. comm.*) in May and June. It appears from this scanty evidence and the sightings of five immature birds in the autumn (and of fledged juveniles in August and September by M. I. Evans), that most breeding is likely to take place during or immediately after the spring rains in April/May.

The nest and eggs have not been mentioned in the literature but one was found on 13 June 1986 by S. Fairman with one egg apparently being incubated at midday. Nest was a cup 7.5 x 12 cm. constructed with coarse dead grass and lined with mud, amongst ferns and shrubs growing 1.6 metres up a terrace wall within a small wooded copse. A nest with three eggs was found in the fork of a juniper tree on 19 June 1982 near Taif, Saudi Arabia. The eggs were pale blue blotched evenly with reddish brown (Jennings *in prep.*)

CONSERVATION AND THE INFLUENCE OF MAN

This species clearly depends on remnant 'natural' vegetation above 1,200 metres which is often associated with watercourses. Cultivated areas may be used to a limited extent, but only when they are adjacent to areas of natural vegetation.

Where substantial vegetation remains at the relevant altitudes, Yemen Thrush normally occurs, but at low densities. The main detrimental influence of man on such areas is likely to be the collection of wood for use as fuel. This is undoubtedly diminishing the remaining habitat of this thrush which must be one of the most vulnerable and scarce of south-west Arabia's endemic species.

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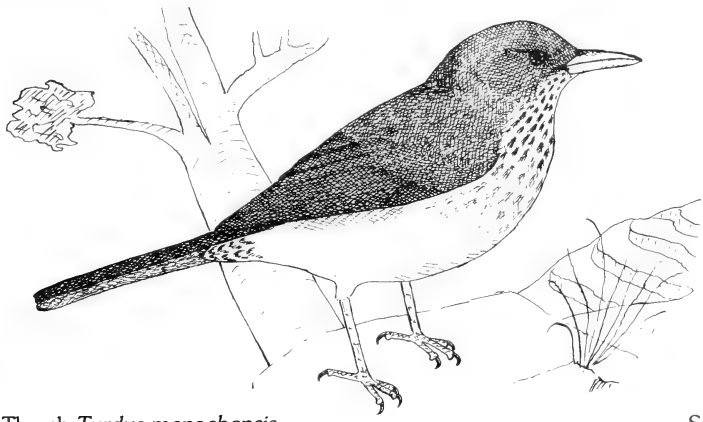

Yemen Thrush *Turdus menachensis* S. Christensen

THE YEMEN WARBLER IN NORTH YEMEN

by

Duncan J. Brooks

INTRODUCTION

The taxonomic position of *Parisoma buryi*, a species found only in the mountains of south-west Arabia, has been long in doubt and remains so. With the other four (exclusively Afrotropical) species of *Parisoma* (known as parisomas, tit-warblers, tit-babblers or tit-flycatchers) it has been placed with the flycatchers (Muscicapidae) but seems now to be established as a warbler (Sylviidae) (Hall & Moreau 1970) – though Campbell and Lack (1985, pp. 596 and 639) make the evident mistake of including the genus in both families. From DNA data, Sibley and Ahlquist (*in press*) have recently confirmed the type of the genus, *P. subcaeruleum*, as a warbler (their 'Sylviini', which includes *Sylvia*). Lees-Smith (1986) has said that *buryi* is 'unquestionably a *Sylvia*' and 'totally unlike' any other member of *Parisoma*, but this has no basis in fact (D. T. Lees-Smith *in litt.*), nor is it borne out by our observations of the bird's distinctive and un-*Sylvia*-like creeping feeding behaviour in dense cover (see Food, below) which appears to be similar to that of *P. subcaeruleum* and *P. layardi* (McLachlan & Liversidge 1970); nor does the appearance of *buryi* seem to differ very radically from these two, or from *P. lugens* – though it does from *P. bohmi*, a rather plump tit-like bird (Archer & Godman 1961; N. J. Redman *pers. comm.*) which is perhaps due for splitting from *Parisoma*. *Parisoma* and *Sylvia* are in any case not far removed from one another (Hall & Moreau 1970).

DESCRIPTION

Similar in size to Orphean Warbler *Sylvia hortensis*, and general structure (including length of tail) also similar to a *Sylvia*. Upperparts uniform brownish-slate-grey, wings slightly darker. Forehead, lore and area from around eye to base of bill black, contrasting with pearl-white iris to give menacing look. Underparts similar to upperparts but paler, with whitish throat bordered at sides by lines of faint blackish streaking. Unlike any *Sylvia*, vent and under tail-coverts are a contrasting colour – dull rusty-orange. Tail blackish with outermost feathers white. Bill black, rather long and fine. Legs dark grey. Male and female apparently similar (though male may have warmer brown crown), but no information on juvenile. Data from the one bird trapped by the OSME Expedition (see Rands *et al.* 1987), on 7 November 1985, are as follows (lengths are in mm., weight in grams):

Location	*Age*	*Sex*	*Wing*	*Tail*	*Tarsus*	*Bill to feathers*	*Bill to skull*	*Bill width*	*Bill depth*	*Weight*	*Primary moult score*	*Brood patch*
Kawkaban	full grown	—	72	75	24.7	11.4	19.6	4.8	4.0	22.0	0	none

VOICE AND SOCIAL BEHAVIOUR

The full song is a short, rich, thrush-like warble – slow, deliberate and quite loud, with an abrupt start; on one occasion, given in bursts of c. 20 seconds. Rendered "*bi woo woo woo woo eee too-chit too-chit*" and "*did id chee eeyou-eeyou-eeyou*". A low-intensity subsong also occurs. On 5 and 21 November singing was heard from several birds moving about and feeding, and on most of these occasions two birds were known to be associating closely

BROOKS, D. J. 1987. The Yemen Warbler in North Yemen. *Sandgrouse* 9: 90-93.

together. Birds have often been seen apparently paired in September-November as well as in spring, so the bond perhaps lasts all year. Mutual preening has been recorded by Cornwallis and Porter (1982).

Calls heard during the Expedition were "*eeyou*" or "*wip eeyou*", and (apparently when alarmed or acting aggressively) a fairly harsh, rapid "*chit-chit-chit*" (rather like House Sparrow *Passer domesticus*), a chattering "*chrr-chrr-chrr*" (like a weaver *Ploceus*), or a rasping "*chrrz chrrz*". King (1978) noted a *Sylvia*-like rasping "*churr*".

STATUS AND DISTRIBUTION

A resident species, with a known range covering only the highlands of North Yemen and the adjoining Asir mountains of Saudi Arabia (north to 19½°N) where it is locally common (Jennings 1981a; Stagg 1984; M. C. Jennings *pers. comm.*). There are no records from South Yemen though it presumably occurs in suitable adjacent areas.

The Expedition found the species at only three sites: Shibam/Kawkaban (2,700-2,800 metres, up to three birds present), Wadi Maytam 1 km. south of Ibb (1,900 metres, up to nine birds) and Wadi Duba above Dhi Sufal (1,900-2,000 metres, four birds). The other sites at which it has been seen in North Yemen are 40 and 60 km. south of Sa'dah (1,800 metres), Manakah (1,800-2,100 metres), Al Mahwit (c. 1,850 metres), near the base of the Sumarah pass (1,900 metres) and Jiblah (c. 1,700 metres) (Sclater 1917; Madge 1981; Cornwallis and Porter 1982; M. I. Evans, S. Fairman, R. F. Porter *pers. comm.*). It seems to be patchily distributed (probably depending on habitat – see below) and is usually seen in very small numbers, though its unobtrusiveness makes it difficult to find. It can be rather common locally, however, as in Wadi Maytam. The bird ringed below Kawkaban on 7 November was still in the area on 3 December.

HABITAT

The essential feature seems to be the presence of suitable vegetation in which to forage. In North Yemen this is generally dense and often tall acacias, especially pollarded or lopped *A. origena*, but also *A. gerardii* and other bushes and low trees such as *Carissa edulis*, *Terminalia brownii*, *Rosa abyssinica* and *Aloe vera*; in Saudi Arabia, habitats are dominated by juniper *Juniperus excelsa* (M. C. Jennings *pers. comm.*), a species which is rare in North Yemen (Al-Hubaishi & Müller-Hohenstein 1984). Probably because of habitat destruction elsewhere, such areas are often rocky and sloping (e.g. hillsides, sides of wadis) and commonly abut cultivated ground – indeed, the trees and other vegetation used for feeding often constitute straggling hedges.

FOOD

Foraging is done almost wholly in trees and bushes, usually near their centre in thick cover and on the larger branches; *Acacia origena* (with its flaky bark) is favoured, especially the dense growth around the boles of pollarded trees. Occasionally forages on and near the ground, beneath acacias and dense hedge-like undergrowth; hops when on the ground. When feeding in *A. origena*, observations of the time birds spent on each tree varied from eight trees in 30 minutes to 13 trees in 17 minutes.

The feeding action is characteristic: a creeping movement (thus differing from a typical *Sylvia*), with the bird probing carefully in nooks and crannies of bark, etc. The fine bill is obviously adapted for this. One bird was seen hanging upside-down like a tit *Parus*, and another tore up apricot flowers with its bill, mandibulating and discarding the petals, perhaps eating the nectaries. Other food seen to be taken comprised insects, one a large one, though the delicacy of the usual feeding technique and the size of the bill suggest that small bark-dwelling invertebrates are the typical food.

BREEDING

The eggs are not yet known to science and only one nest has so far been reported, on Jabal Sawdah (Saudi Arabia) on 21 July: thinly constructed of roots and grasses, unlined and fragile, and about 20 cm. above ground in a small bush; it held three young about five days old, with dark skin and yellow gapes (Jennings 1981b). The only other data on the timing of breeding are as follows. As well as in November (see above) singing has been recorded in March, April and September, and birds have been seen collecting nest material in March, mutual preening in April (Cornwallis & Porter 1982; Martins 1986; M. I. Evans), and feeding a recently fledged juvenile at Ibb in late May or early June (A. Helbig: *OSME Bull.* 1983, 10: 17). The bird trapped in November (see above) showed neither brood patch nor moult and was in worn plumage.

ACTIVITY

Yemen Warblers are unobtrusive but not shy, with movements which are typically rather slow and deliberate (see Food, above). The tail is often held slightly raised and fanned, and wagged slightly from side to side. The flight is rather weak and can be noisy with whirring wings. Birds fly low when moving between trees, swooping upwards to land again.

CONSERVATION AND INFLUENCE OF MAN

Yemen Warblers seem heavily dependent on trunk-forming acacias, especially *A. origena*, and on juniper. However, with the demand for firewood and the prevalence of cultivation and of clearance generally, these trees exist only in scattered and very small stands. This situation has evidently obtained for a considerable time, but, with the heavy grazing pressure that now exists almost everywhere, regeneration seems minimal and any further clearance must be a threat to this already localised bird. The apparent extra suitability of trees subject to pollarding or limited lopping (see Habitat and Food, above) is, however, perhaps some compensation for overall loss of habitat. It would be valuable to study the species' habitat utilisation and population density in the few remnants of more natural acacia woodland which exist in the north of North Yemen between Huth and Sa'dah (Al Hubaishi & Müller-Hohenstein 1984). We found no evidence of direct persecution by people and it is highly unlikely to occur.

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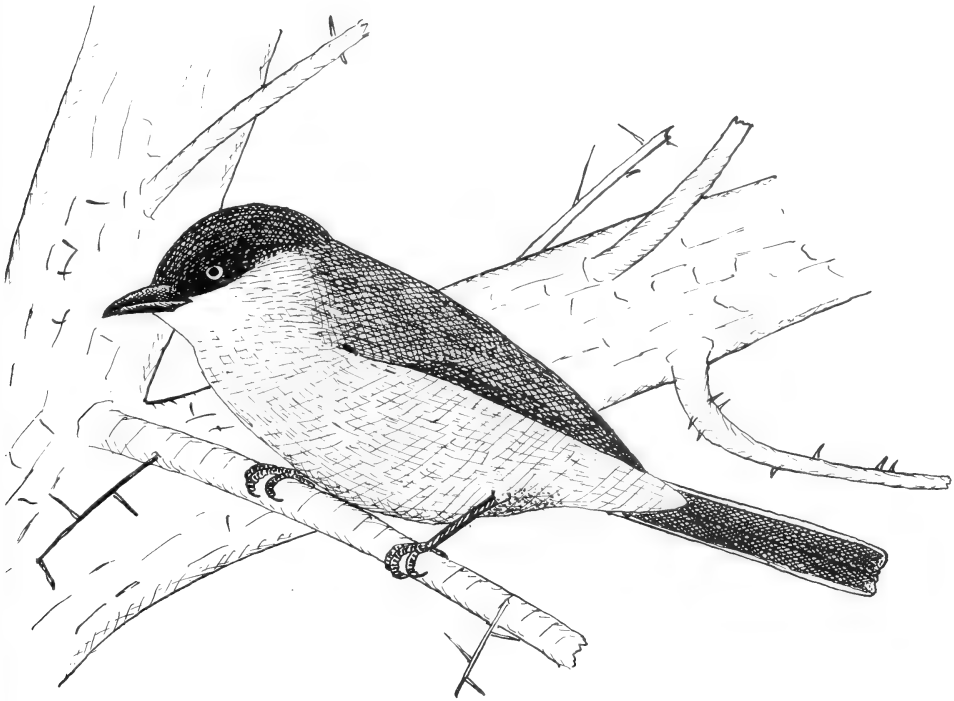

Yemen Warbler *Parisoma buryi* S. Christensen

THE ARABIAN GOLDEN SPARROW IN NORTH YEMEN

by

C. G. R. Bowden

INTRODUCTION

The Arabian Golden Sparrow *Passer euchlorus* has a limited range, being confined to the Tihamah of North Yemen, Saudi Arabia and to parts of South Yemen, Djibouti and northern Somalia. It is a gregarious species that forms large, often mixed-species flocks. Outside the breeding season it is found exclusively in cultivated areas and may therefore be highly dependent upon man. A closely related species, the Sudan Golden Sparrow *P. luteus*, has a much wider range from coastal Sudan westwards including much of the Sahara, but may have a similar ecology.

DESCRIPTION

Notably smaller than House Sparrow *P. domesticus*. Breeding plumage of the male is predominantly yellow, considerably brighter and more sulphurous than in the female. It is yellow on all but the flight- and tail-feathers which are dark grey-brown, strongly edged pale ashy-grey. The breeding female is duller, usually having cinnamon/pale rufous on the crown and nape; the paler yellow is confined to the head, mantle, throat, breast and vent, giving it a more similar appearance to the juvenile. Non-breeding and juvenile plumages are very plain grey-fawn above with slightly darker streaking on the mantle; much paler below with a yellow wash on the face, throat and breast merging to off-white on the belly and flanks. Bill varies from dull flesh to creamy-grey, except for breeding males in which it is black. The iris is mud-brown, but in a sample of 27 birds caught by the OSME Expedition (see Rands *et al.* 1987) the legs varied from pale brown to flesh coloured, with immatures tending to have browner ones. Biometric data from this sample, netted near Al Qutay' on 28 November, are as follows (lengths in mm., weight in grams):

	Wing	*Tarsus*	*Bill to feathers*	*Bill to skull*	*Bill width*	*Bill depth*	*Weight*	*Primary moult scores*	*Brood patch*
Range	57-63	14.9-16.2	6.9-8.3	10.1-12.4	5.1-5.7	5.5-6.3	12.0-16.8	0	—
Mean	60.6	15.8	7.4	11.3	5.4	6.0	14.0	0	none
Sample size	27	10	10	10	10	10	27	27	27

N.B.—One bird was in the final stages of secondary moult and six of the 27 birds were undergoing some body moult.

VOICE

The call is a typical sparrow-like chirp but higher pitched and more abrupt than that of House Sparrow.

STATUS AND DISTRIBUTION

In North Yemen, all records are from the Tihamah at elevations of up to 200 metres where it is locally abundant. In the period October-November 1985, the Expedition found it most numerous south-east from Hodeidah in the coastal belt, and somewhat less common further north-west. Birds were recorded at eleven localities from near Al Fazzah to near Suq 'Abs,

BOWDEN, C. G. R. 1987. The Arabian Golden Sparrow in North Yemen. *Sandgrouse* 9: 94-97.

sometimes in their thousands and rarely in parties of less than ten. The species was, however, absent from much of the Tihamah, particularly those areas away from cultivation (see Habitat, below).

Elsewhere, the species has a very limited distribution in Djibouti and northern Somalia (Welch & Welch 1984; Ash & Miskell 1983) and in the Tihamah north to Jedda in Saudi Arabia (Jennings 1981 & *in prep.*) where Stagg (1984) recorded birds up to 600 metres. It is also known from Aden in South Yemen (Jennings *in prep.*). There is evidence to suggest a considerable recent range expansion westwards in Djibouti, which if continued will lead to range overlap with the closely related Sudan Golden Sparrow (G. R. & H. J. Welch *pers. comm.*).

HABITAT

Birds were recorded exclusively from agricultural areas of the Tihamah. They often perch in trees or scrub (e.g. *Ziziphus* and *Acacia*) along field boundaries, using them for cover when alarmed; indeed they were not seen in areas without such cover.

Sightings in October and November were exclusively from millet and sorghum fields with some other available cover, but old nests found in the northern Tihamah were mostly in sizable patches of acacia (*A. ehrenbergiana* and *A. tortilis*) along wadis with cultivated silt plains nearby. This is an indication of some change in habitat utilization and distribution during the breeding season, probably related to the limited availability of nest sites.

In Djibouti where agriculture is very limited, G. R. & H. J. Welch (*pers. comm.*) recorded small flocks on the coastal plain in areas of low bushes (probably *Suaeda*) and up to 200 roosting in acacias along a wadi close to market gardens. They also recorded at least 50 birds 120 km. inland in a newly established area of agriculture surrounded by a large, sandy plain. This isolated area has presumably only recently been colonised and illustrates how this species readily utilises areas of cultivation.

FOOD

Birds were observed feeding on millet seed heads on several occasions and in one case a solitary millet head was being eaten in a field of sorghum. Flocks were often flushed from the ground amongst tall millet and sorghum where they were presumed to be foraging. The closely related Sudan Golden Sparrow feeds on a range of other seeds and insects (Mackworth-Praed & Grant 1960), and this could also be the case for Arabian Golden Sparrow.

BREEDING

From October to December no direct evidence of breeding was recorded. In mid-October the proportion of birds within separate flocks showing any bright yellow plumage varied from zero to 25%. By late November this proportion had increased markedly to 45-55% and a few of the males had black bills (a feature of breeding plumage) by this time. There was one record of song on 26 November 1985. This suggests an approaching breeding season, possibly as early as December/January, although Cornwallis and Porter (1982) recorded display in April which was not seen between October and early December. Copulation and birds entering and leaving nests has been observed in south-west Saudi Arabia in early March (Jennings *in prep.*). Presumably breeding occurs during or after the rains in spring or early summer, but whether it occurs more extensively than this remains unclear. The lack of moulting activity in the sample caught in November (see above) suggests no recent breeding activity.

Records from Djibouti show a similar trend; only a small proportion were in full breeding plumage in November, but in March it was the majority of birds (G. R. & H. J. Welch *pers. comm.*). This again suggests a main breeding season in the spring.

Breeding is apparently colonial, and the Expedition recorded between 10 and 300 nests together in adjacent acacias (not usually more than five nests per tree) between two and three

metres above the ground. The nests were in *A. ehrenbergiana* and *A. tortilis*, usually in the most dense and impenetrable crown and at least one metre apart. Jennings (*in prep.*) recorded Rüppell's Weaver *Ploceus galbula* also nesting in the same trees in a colony of 1-2,000 at about 17°N on the Saudi Arabian Tihamah. The nest structure is a compact oval dome of thin acacia twigs (c. 40 × 30 cm.) with a side entrance hole.

ACTIVITY

This gregarious species is found in flocks of up to a hundred birds, often mixed with House Sparrow and Rüppell's Weaver. It forms compact flocks when feeding on seed heads and on the ground, flying up *en masse* to the nearest tree or bush when alarmed. In late November near Al Quaty' a number of flocks of 60-100 birds were seen converging on an area of acacias in late afternoon forming a large communal roost of well over 2,000 birds by dusk. There was a similar roost gathering on 19 October c. 20 km. east of Az Zuhrah.

CONSERVATION AND INFLUENCE OF MAN

This species lives in association with man, being found almost exclusively in heavily cultivated areas with trees or bushes along field boundaries. It does feed, to some extent at least, on millet, and children are employed as bird-scarers to bang tin cans, and plastic bags are hung up to deter mixed sparrow flocks from feeding in the ripe millet and sorghum fields. Although bird-scaring activities were observed in several places there was no sign of shooting or evidence of nest destruction. Although the Arabian Golden Sparrow is common and locally abundant in the cultivated parts of the Tihamah, it is probably dependent on adjacent trees and bushes, particularly acacias, for cover and nesting habitat. This could be important if agricultural or wood-cutting practices intensify, resulting in the removal of this vegetation. At the moment, however, it appears to thrive on current agricultural practices, particularly the cultivation of millet, but goes largely unpersecuted despite this.

ACKNOWLEDGEMENTS

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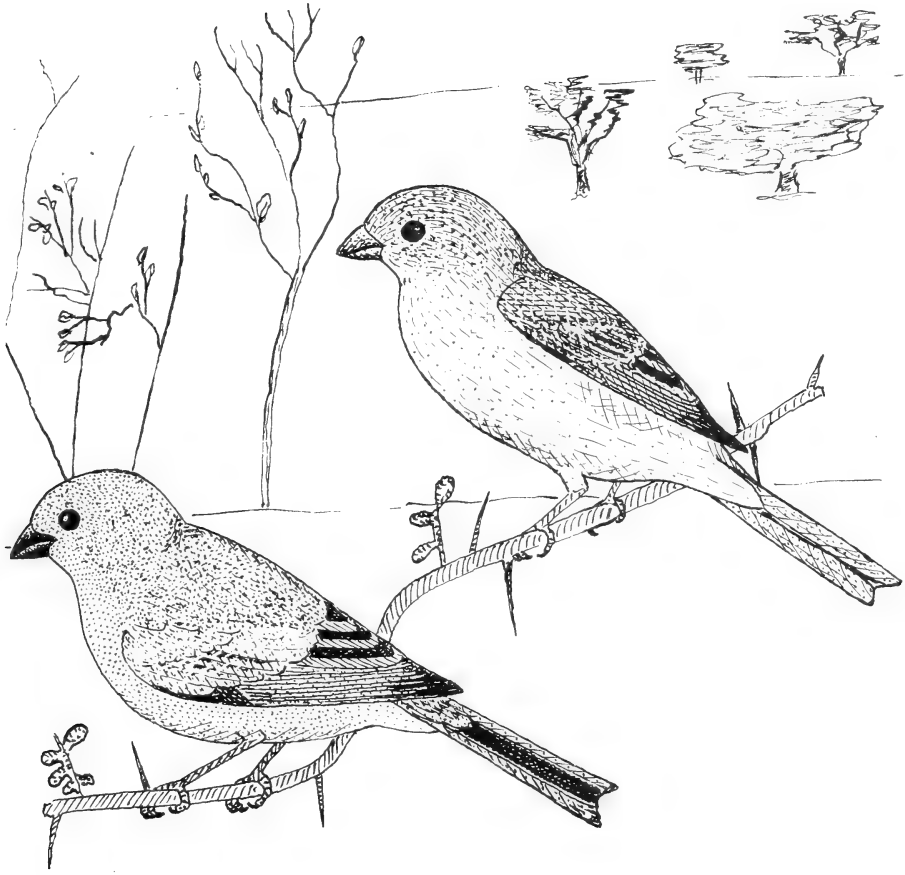

Arabian Golden Sparrow *Passer euchlorus* S. Christensen

THE ARABIAN WAXBILL IN NORTH YEMEN

by

Steen Christensen and R. F. Porter

INTRODUCTION

The Arabian Waxbill *Estrilda rufibarba* is a poorly known endemic to south-west Arabia where it is largely confined to the lower slopes and wadis of the western escarpments. It is closely related to the Common Waxbill *Estrilda astrild,* Black-lored Waxbill *E. nigriloris*, Rosy-rumped Waxbill *E. rhodopyga* and Black-rumped Waxbill *E. troglodytes*, all from Africa, and has sometimes been treated as a race of the latter. Goodwin (1982), however, considers it more likely to represent some stock ancestral to this group and he therefore followed Hall and Moreau (1970) in treating it as a separate species.

DESCRIPTION

A typical waxbill in size and structure. Adults are similar and there is little seasonal variation. Ashy-grey above with fine whitish-grey and dark vermiculation covering most of the upper-parts; back and wings often appear warmer grey-brown in some birds (females?). Dark crimson stripe from bill through eye to side of nape. Chin to upper breast and sides of head silky-white, becoming warm buff below with fine dark vermiculations on sides of breast and flanks, extending in some onto lower sides of neck. Rump and tail black with whitish on outer webs of outer tail-feathers. Juvenile has blackish-brown (not red) mask through the eye, is browner and has less vermiculations above (including top of head) and has duller underparts with browner sides of body and vermiculations faint or absent. Bill, at least of adult male, blackish-grey with red mark on sides of upper mandible and at base of lower mandible; outside breeding season and in juveniles bill bluish-black. Legs blackish-grey.

The biometric and moult data from one adult netted during the OSME Expedition (see Rands *et al.* 1987) near Ibb on 21 November 1985 follows (lengths are in mm, weight in grams):

Wing	*Tail*	*Tarsus*	*Bill to Feathers*	*Bill to Skull*	*Bill Width*	*Bill Depth*	*Weight*	*Brood Patch*
48	45.8	13.1	7.3	11.1	4.6	5.7	8.3	None

Moult
Primaries – left wing: 1-3=N, 4=0, 5-6=N, 7=0, 8-9=N, 10=4
right wing: 1-5=N, 6=4, 7=0, 8-9=N, 10=4
Secondaries: 1=2, 2-3=0, 4=3, 5=N
Tail: N

VOICE

Flight call a rather hard "*che-che*" or "*tjee*" (1-2 syllables) or a harder, harsher "*chee-chee-chee*". When feeding, flocks utter a constant "*tse-tseeee*" call which develops into a noisy chatter. No distinct song has been described but is probably poorly developed as in most estrildids. Indeed song has not been recorded in North Yemen in at least January, March, April, October-December when waxbills have been encountered.

CHRISTENSEN, S. & PORTER, R. F. 1987. The Arabian Waxbill in North Yemen. *Sandgrouse* 9: 98-101.

STATUS AND DISTRIBUTION

Recorded during the Expedition at a number of localities at altitudes between 250 and 2,200 metres but most commonly above 1,000 metres. Mainly encountered in the western ramparts, foothills and inner (eastern) Tihamah but was also found in the north of the country at Sa'dah. Has been recorded up to 2,400 metres (Cornwallis & Porter 1982) and 2,600 metres (M. I. Evans *pers. comm*).

Outside North Yemen has a very limited distribution in south-west Saudi Arabia and South Yemen. In Saudi Arabia it is resident mainly in the coastal Asir Tihamah in the extreme south-west to 19° 45'N (Jennings 1981 and *pers. obs.*, Stagg 1984) but in winter has been recorded up to c. 1,600 metres, implying local wandering. In South Yemen it is apparently confined mainly to high ground from Aden to Tarim (Meinertzhagen 1954; Bark-Jones & Hartley 1957).

HABITAT

Occurs in fertile, cultivated wadi-bottoms and plains, rocky hillsides and terraced slopes usually with thick cover of trees and bushes, and invariably adjacent or close to areas of cereal cultivation; also often in sub-tropical woodland or near to reeds. It was most often found near running water and boggy areas with dense vegetation such as *Arundo donax, Typha* and bamboo thickets, or patches of dense scrub and herb vegetation with trees such as acacias (e.g. *Acacia origena*), *Ziziphus spina-christi, Cordia abyssinica, Ficus populifolia,* palms *Phoenix*, banana trees and tamarisk *Tamarix*. From July to September, M. I. Evans (*in litt.*) found that of 279 birds observed, 205 (73.5%) frequented areas with flowing water.

FOOD

Frequently observed feeding, especially on seeds of wild grasses, sorghum and millet (either on the seed head or seeds fallen to ground). Also recorded taking seeds from riverine scrub (e.g. *Jatropha*), *Chenopodium, Tamarix* and *Aerva javonica* (an agricultural weed). Previously has been recorded feeding on maize (Cornwallis & Porter 1982). Meinertzhagen (1954) gives the main diet as seeds from grasses and *Juncus*.

On two occasions observed stripping seeds from grasses and feeding on them on the ground; in one case the pecking rate was 16 pecks per minute (over three minutes). Another feeding strategy observed was for two or more birds to land on a grass or cereal stem, bow it towards the ground, and for the nearest bird to the seeds to start feeding. Birds were also observed reaching grass seeds from larger neighbouring plants. Sometimes whole flocks would descend into tall grass or cereals to feed, disappearing from view.

BREEDING

The Expedition obtained no evidence of breeding during October and November other than observing three recently fledged juveniles and the possible begging behaviour of a juvenile towards an adult. The proportion of juveniles to adults during October and November was rather small (less than 25%) suggesting that this was not a post-breeding period. Breeding is probably linked with the occurrence of rain and in the highlands two such seasons occur: in March-April and July-September (Al-Hubaishi & Müller-Hohenstein 1984) but rain can be erratic. The only evidence of breeding supports this, with five or six birds observed at a nest on 21 June (M. I. Evans and D. and D. Perkins *in litt.*).

ACTIVITY

Although observed in couples (pairs?), most commonly seen in small groups, though flocks of up to c. 200 recorded. Regularly seen drinking from streams with nearby plant cover and

frequently feeding was followed by drinking. Once a flock came out of dense vegetation, drank, bathed and preened intensively at the edge of a stream, then flew back to the cover while others came out to replace them.

Although feeding and drinking were the most frequent activities, preening was also observed regularly either at streams or in trees and especially in direct sunlight following bathing. Once a male was observed preening the throat and cheeks of a female who lifted her head to facilitate this.

On another occasion a juvenile and adult perched touching each other while the juvenile preened. On a few occasions birds would perch on a branch (e.g. in *Ficus populifolia* and *Cordia abyssinica*) and sit either very close (c. 5 cms. apart) or touching, while calling constantly. This species would therefore appear to be rather social in its behaviour, keeping in close contact when perched and forming tight, calling flocks when flying. Usually not seen to mix with other species when feeding or gathering at dusk prior to roosting, though in March observed feeding on maize with Zebra Waxbills *Amandava subflava*, the only other waxbill in North Yemen (Cornwallis & Porter 1982). On one occasion pre-roosting birds gathered in flocks in isolated *Acacia* sp. and *Ficus* sp. on a wadi slope calling continuously. Numbers built up to about 200 and then small parties departed in succession over two to three minutes to the roosting site: a bamboo thicket at the edge of a stream. Once the last flock had entered the vegetation all birds became silent. Cornwallis and Porter (1982) mention many hundreds roosting communally with Zebra Waxbills in *Typha*.

Though easily approached appears to be rather wary. When sitting or feeding will 'nervously' flick or wag tail up and down or from side to side.

CONSERVATION AND INFLUENCE OF MAN

Since it feeds largely on growing cereals, such as sorghum, millet and maize it would appear to be heavily dependent upon agriculture. The Arabian Waxbill, however, is not abundant (though it does form local concentrations) and thus is not likely to present a threat to grain yields. Certainly there is no evidence of measures being taken to control its numbers or activities. Its future is doubtless linked with the further spread of agriculture in south-west Arabia, and thus associated development such as the use of pesticides and herbicides could have a deleterious effect.

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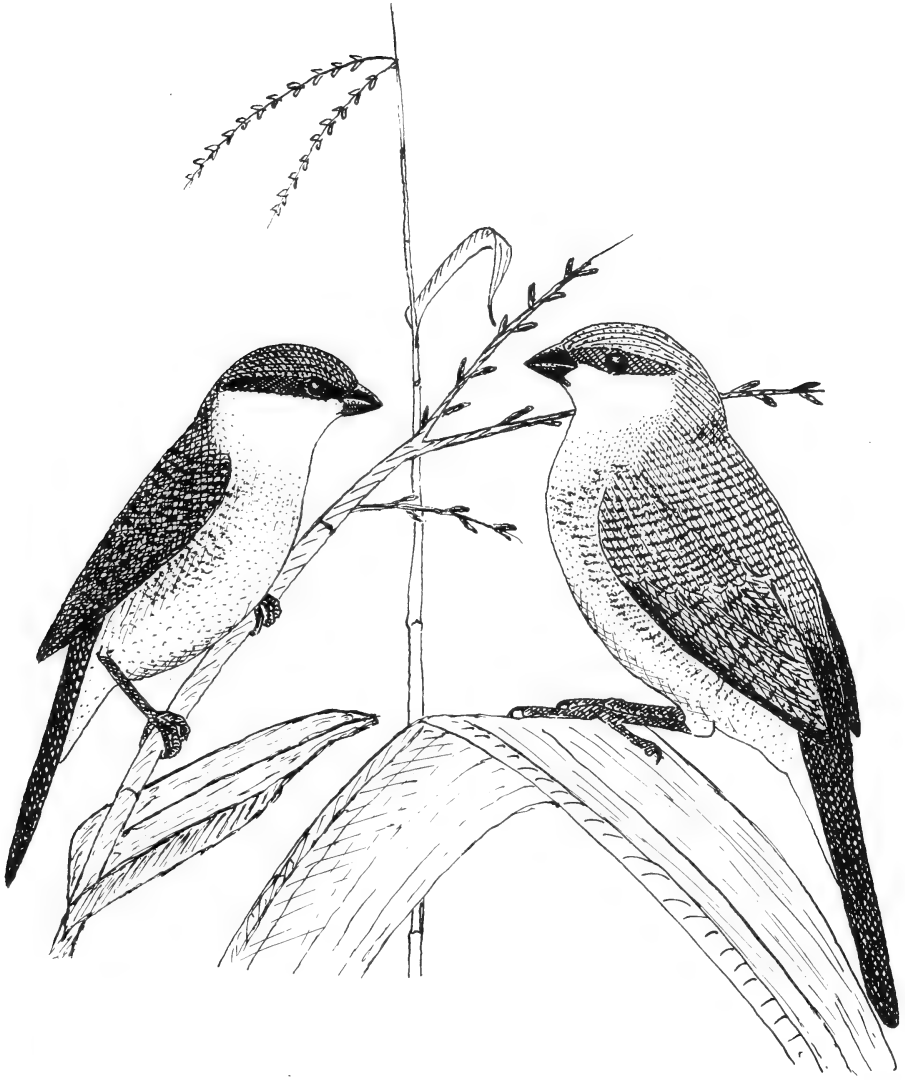


Arabian Waxbill *Estrilda rufibarba* S. Christensen

THE ARABIAN AND YEMEN SERINS IN NORTH YEMEN

by

M. J. Everett

INTRODUCTION

Both the serins of Arabia, the Arabian *Serinus rothschildi* and the Yemen *S. menachensis* are endemic to the south-west of the Arabian Peninsula. Meinertzhagen (1954) treated the Arabian Serin (also known as the Olive-rumped or Yellow-rumped Serin) as conspecific with the Yellow-rumped Seed-eater *S. atrogularis* of East Africa; he recognised two races, *S. atrogularis rothschildi* in southern Yemen and *S. a. philbyi* in North Yemen and Saudi Arabia.

DESCRIPTIONS

Meinertzhagen (1954) clearly regarded the two species as very similar, even going so far as to suggest that the Yemen Serin "would be impossible to identify . . . in the field". In fact, field identification is relatively straightforward.

The Yemen Serin is a tiny, streaky brown serin with no very obvious field marks. The crown and nape are greyish-brown, with fine streaks, and the similarly-coloured upperparts are entirely grey-brown to earth-brown with broad but rather indistinct darker streaking; the wings and tail are uniform grey-brown sometimes showing two indistinct buffish wing bars. In the field, the underparts contrast a little with the upperparts, being off-white to greyish-white with light to moderate greyish-brown streaking on the breast and belly. Almost the only distinctive plumage feature is a narrow, dark moustachial stripe, varying considerably from individual to individual in extent and conspicuousness, but often accentuated by the whitish unstreaked throat. The small, stubby, almost conical bill is a very good field mark, both in shape and colour: the upper mandible is horn-coloured, the lower variably dull flesh, brownish-pink or even almost orange-yellow. The legs are dull flesh-pink.

The Arabian Serin is almost as nondescript, more or less identical in size with just a suggestion of a longer tail. The brownish head can appear quite dark or dingy and is relieved only by a very faint, pale supercilium (often barely noticeable) and a slightly mottled appearance to the ear-coverts and sides of the throat. There is no moustachial stripe. The upperparts are a similar brown, but with a slight olive cast visible at very close quarters; the rump is greenish-yellow, not clearly demarcated but often surprisingly conspicuous at rest. A pale, almost buffish chin and throat show some contrast with the greyish-white underparts (usually less white than Yemen Serin), which are indistinctly streaked darker on the breast and flanks. The bill shape, clearly deeper than in Yemen Serin and with a characteristically curved culmen, gives the face a decidedly chunky look, reminiscent of a rosefinch *Carpodacus* or even a tiny Bullfinch *Pyrrhula pyrrhula*. There is no contrast between the mandibles (unlike Yemen Serin), which vary from pale, dull flesh through dull horn to dark or bluish-grey: to what extent these colour differences relate to age, sex or season is unknown. The legs are pinkish. A helpful clue to the identification of Arabian Serin is its habit of wagging its tail (N. J. Redman *pers. comm.*).

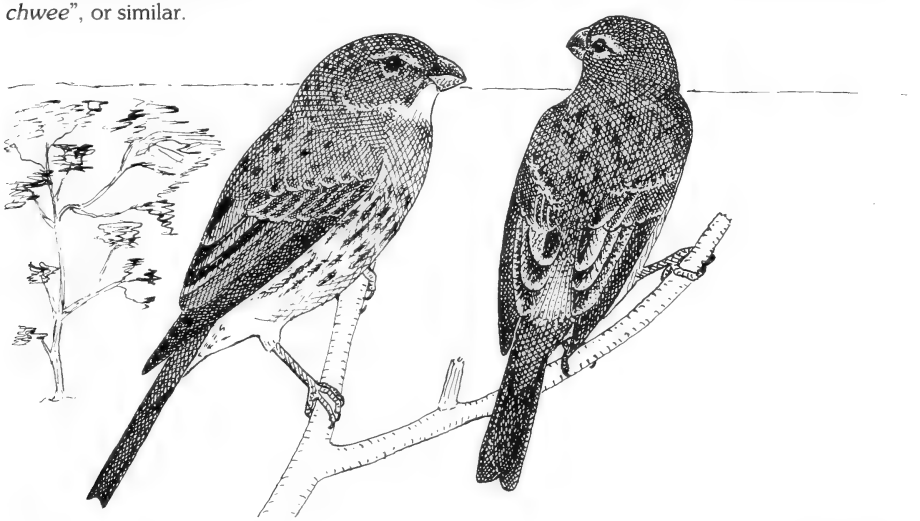
VOICE

With practice, the two species can be distinguished by call. The commonest call of Arabian Serin, uttered in flight or when perched, is a high-pitched "*tsee-tsee*"; perched birds were also heard to utter a quiet "*tsit tsit*". The Yemen Serin has a distinctive and often quite musical "*chi*

EVERETT, M. J. 1987. The Arabian and Yemen Serins in North Yemen. *Sandgrouse* 9: 102-105.

chi chi chi" in flight, but this is rather variable and sometimes has a Redpoll-like *Carduelis flammea* quality. It may be preceded by a Linnet-like *C. cannabina* chatter, or "*chi-chip*" calls. Several single flight notes have been heard, such as "*chwee*", and variants "*tseep*", resembling Yellow Wagtail *Motacilla flava*; and a Siskin-like *Carduelis spinus* "*tsee-oo*". At the second nest site described below, a loud flight-call "*twee-chew*" was probably an anxiety note. Flocks feeding on the ground produced a continuous twitter of quiet "*cheep-cheep*" notes.

The Arabian Serin has a pleasing and rather variable song; Phillips (1982) commented on its Linnet-like quality. There is much variation in the number of syllables per song-phrase, some of which have a rising inflection. Phonetic renderings made by the Expedition include "*tsoo-tsoo-tsit-tsoo*" and "*tsoo-tsi-tsi-tsoo*"; Phillips (1982) gave "*seeoo tee-teacher, seeoo teete-teacher, seeoo tee tee seeoo*". The Yemen Serin's song was heard infrequently (both from perched and flying birds) and seems much simpler and less musical: "*chew chee chee chwee*", or similar.



Arabian Serin *Serinus rothschildi* S. Christensen

STATUS AND DISTRIBUTION

The records of the OSME Expedition (see Rands *et al.* 1987) and those of previous observers show that the Arabian Serin is fairly widespread through the highlands of North Yemen. Very little is known of its status in South Yemen, but Meinertzhagen (1954) records it as present in the northern parts of that country and east into the western Hadramawt. Jennings (1981) has mapped the distribution of the Arabian Serin in Saudi Arabia, where it is an uncommon resident in the Hejaz and Asir (as far north as 26° 15′N) down to the North Yemen border.

The Yemen Serin is widespread and fairly common in the highlands of North Yemen. There are three records from Kinkayras in South Yemen (M. C. Jennings *pers. comm.*) where Arabian Serins were also seen. Jennings (1981) records it as an uncommon and local resident in the southern Asir of south-west Saudi Arabia but it has only been recorded as far north as 19° 15′N (M. C. Jennings *pers. comm.*).

HABITAT

Cornwallis and Porter (1982) indicated different habitats for the two species: Expedition observations agree with their conclusions.

The Yemen Serin is essentially a bird of dry, rocky country with sparse vegetation, occurring on open, stony plateaux and hillsides as well as on and around cliffs. It occurs commonly

around towns and villages, even in the heart of Sana'a. Cornwallis and Porter (1982) recorded it at 2,000-3,200 metres. Most of the Expedition records refer to the upper end of this range and a flock was also seen at the summit of Arabia's highest mountain, Jabal an Nabi Shu'ayb (3,666 metres).

Although the Arabian Serin occurs occasionally in open, rocky country with little vegetation, it shows a clear preference for cultivated highland areas of all kinds, places with good tree cover and/or bushes and shrubs, or (as is common in North Yemen) a combination of all these features. Yemen Serins were rarely encountered in these habitats. Expedition records of Arabian Serin were mainly in the altitude range given by Cornwallis and Porter (1982) – 1,000-2,400 metres – but birds were also found at 2,600-2,800 metres and, on the exceptionally well-wooded slopes of Jabal Bura', as low as 700-800 metres.

FOOD

Both species are clearly principally seed-eaters, but no doubt also take some insect or other invertebrate food, as Meinertzhagen (1954) records in the case of Arabian Serin. Millet and grass seeds were seen to be eaten by both species, as well as seeds of *Aloe* and *Agave* by Arabian Serin and of *Rumex* and *Salvia* by Yemen Serin. Observations of both species foraging among other low-growing plants indicate that a wider range of seeds may be taken.

BREEDING

Almost nothing is known about the breeding of Arabian Serin. The Expedition noted singing males on a number of occasions, and two young birds were seen being fed by adults in November. Cornwallis and Porter (1982) recorded song, paired birds and the collection of nest material from 16 March into April.

The Expedition produced two interesting breeding records for Yemen Serin, both involving the use of old nests of African Rock Martin *Ptyonoprogne fuligula*. On 11 October a pair were found feeding young in a nest about 25 metres up on a sheer rock face, beneath an overhang. The chicks gave a sibilant begging call, their noise in the nest also being described as "cicada-like". The second nest, found on 3 December, was again beneath an overhang, but on a much smaller face and only about three metres above the ground on a steep, stony hillside. It could not be reached, but was seen to contain nest material comprising coarse grasses and orange string. A pair was in close attendance and showing some agitation, but whether the nest contained eggs or young could not be ascertained. Previous observers have not recorded the use of old African Rock Martin nests, but hole or cavity nesting is well known. Phillips (1982) found nests in clefts in cliffs in late September, while Cornwallis and Porter (1982) recorded them in holes in rock faces, walls and a house wall in March and April. Deetjen (1971) found a nest with eggs in Sana'a in March.

ACTIVITY

Feeding habits closely resemble those of other serins and small finches. Both species perch freely in low plant cover or forage on the ground. One observation noted the almost tit-like agility (including hanging almost upside-down) of Arabian Serins.

Yemen Serins occurred in flocks of up to 30, in company with Yemen Linnets *Carduelis yemenensis* on several occasions. This association was also recorded for Arabian Serin, but this species was only seen in pairs or very small groups: a party of 12 was actually exceptional. The two species were not seen in mixed flocks.

In Sana'a, Yemen Serins were seen frequently on buildings and rooftops – even clinging to vertical walls on occasion; on one rooftop two birds regularly visited a dripping tap to drink. Elsewhere, Yemen Serins usually perch on rocks whereas African Serins show a distinct preference for perching in bushes.

CONSERVATION AND INFLUENCE OF MAN

It seems unlikely that either species is threatened in any way. Both have probably benefited from the form of land-use which has existed for centuries in the uplands of North Yemen and which seems likely to continue along similar lines for the foreseeable future. Grazing pressures are probably increasing, but this seems unlikely to affect either species. The Arabian Serin clearly adapted long ago to living in cultivated areas, while the Yemen Serin obviously co-exists with man even in the largest towns. Neither species occurs in sufficient numbers to produce any sort of threat to local agriculture.

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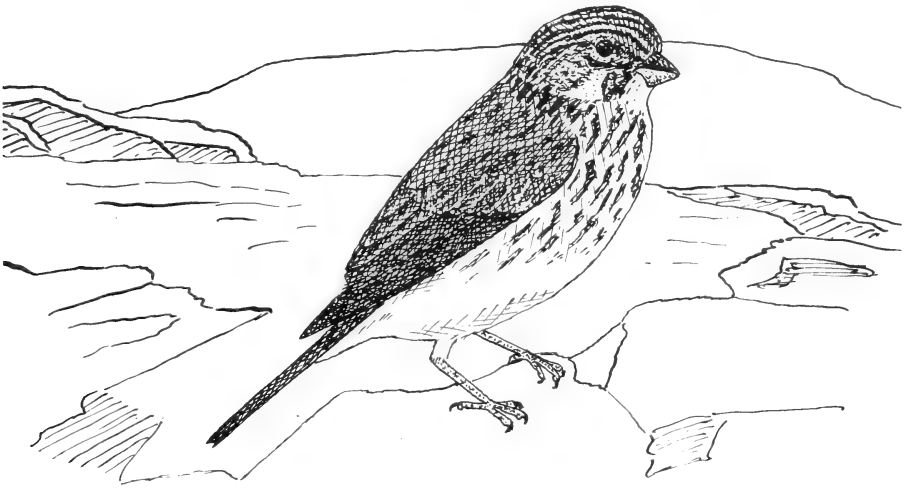

Yemen Serin *Serinus menachensis* S. Christensen

THE GOLDEN-WINGED GROSBEAK IN NORTH YEMEN

by

R. P. Martins

INTRODUCTION

The Golden-winged Grosbeak *Rhynchostruthus socotranus* is sufficiently distinctive to merit classification in a monospecific genus, the affinities of which are uncertain. Meinertzhagen (1954) considered that its geographical range, coarse bill and plumage pattern appear to be closer to some of the Himalayan finches than anything in Africa or Europe whilst admitting also the possibility of some relationship to *Carduelis*. Ripley and Rabour (1961) felt it bore some resemblance to *Rhodopechys* and Ripley and Bond (1966) later endorsed the idea of an affinity with the Himalayan avifauna, however distant, partially on the basis of an examination of skull structure. However, Paynter (in Peters 1968) considered that the similarities in skull structure are due to convergence (therefore irrelevant to taxonomic considerations) and favoured the theory of a cardueline origin. Most recently Lees-Smith (1986) cited overall body size and colour pattern as evidence that it has probably evolved from cardueline stock stating that it bears no resemblance to any Afrotropical cardueline finch. The similarity of certain vocalizations to those of Greenfinch *Carduelis chloris*, Goldfinch *C. carduelis*, Linnet *C. cannabina* and Yemen Linnet *C. yemenensis*, and the Greenfinch-like display flight, perhaps support this view.

DESCRIPTION

A colourful and attractive medium-sized, robustly shaped, short-tailed finch with a massive conical bill; shows limited sexual dimorphism – most birds can be sexed with confidence. The following description applies to the Arabian race *percivali*.

Lower nape to rump and lower underparts: cold greyish-brown; crown, upper nape, lower throat and upper breast: pale chocolate-brown, occasionally warmer, more chestnut coloured, on throat and upper breast. Black surround to base of bill comprising lores, fore-cheeks and chin often continuous with thin black line across forehead in males but absent in females. Conspicuous circular white cheek-patch extending from rear lower ear-coverts to upper throat in males, darker and often sullied with grey, except on extreme fore-cheeks, in females. Wings predominantly black with bright lemon-yellow inner median and inner greater coverts, grading toward yellow outer webs only toward outer wing. Lesser coverts: grey with broad yellowish fringes, appearing green. Outer webs of inner secondaries and tail feathers: lemon-yellow. Tertials: black, moderately or broadly fringed yellow or greyish-white. Tail: notched; bill: black; legs and feet: flesh-coloured; iris: dark.

On several occasions individuals presumed to have recently assumed adult-like plumage, perhaps having hatched in the previous breeding season, were seen which had almost the entire cheek-patch heavily suffused with grey. This was thus reduced to a thin greyish-white crescent running from below and behind the eye to the base of the lower mandible. The black surround to the bill was reduced and absent from the forehead and indistinct broad greyish streaks were present in the centre of the breast on at least one individual. An attempt to age and sex such individuals precisely must await adequate knowledge of breeding seasons and moult sequence.

MARTINS, R. P. 1987. The Golden-winged Grosbeak in North Yemen. *Sandgrouse* 9: 106-110.

Juvenile plumage is essentially brown with the entire head and underparts heavily streaked darker. This streaking is less extensive on the lower belly, vent and undertail-coverts. The only published illustration (Gallagher & Woodcock 1980) shows the general tone of the plumage a little too green, on the basis of the skins examined.

Biometric data for the one individual netted during the OSME Expedition (see Rands *et al.* 1987), on 4 November, is as follows (lengths in mm., weight in grams):

Location	*Age*	*Sex*	*Wing*	*Tarsus*	*Bill to feathers*	*Bill to skull*	*Bill width*	*Bill depth*	*Weight*	*Primary moult score*	*Brood patch*
Near Ta'izz	Adult	Unknown	87	16.2	9.9	15.2	8.2	10.4	25.1	0	none

A bird collected in Aden on 3 July had just commenced moult (Guichard & Goodwin 1952).

VOICE

This is a vociferous species. The full song is a loud musical jangling series of liquid metallic notes typically interspersed with the oft-repeated phrases "*whee wee-ooo wheee*", "*sit eeee did-ee did ooo ee*" and "*swip ooo wee wip oo*", also "*si-si-si ooo*" or "*tiddl-y-it*" resembling Yemen Linnet, and a rippling "*did-ee*" and "*did-did ee*", these last two either delivered once, as calls, or several times in rapid succession. Other calls include a musical "*wip*" or "*wink*", resembling Linnet and Yemen Linnet, a rather slow "*wheet wheet*", a rich rippling "*tut-tut-tut-tut*" and a wheezing "*tzee*" resembling Greenfinch. In general the song resembles that of the Goldfinch.

The component phrases of the song are usually delivered in a predictable order, often interspersed by pronounced pauses but sometimes strung together, particularly warbling phrases. Some notes are nasal, others very clear and pure.

Song activity was found to be linked with general activity patterns (see below). Song is delivered readily for periods of several seconds and typically several minutes at a time on an intermittent basis, perhaps at any time of day though Expedition records indicate that song is most frequent in the second half of the morning and again from mid-afternoon until evening, birds being most vocal in the hour prior to dusk. The maximum observed period of continuous full song was 13 minutes.

On two occasions birds, in essentially adult plumage, but showing some characteristics indicative of immaturity, delivered a Goldfinch-like subsong, simpler, quieter and softer than the typical song. A bird in this plumage was also seen to elicit a feeding response from an adult on two occasions by constantly uttering a repeated one-note begging call – "*elyit*" or "*djimp*".

Recordings of the song and various other vocalizations were made by P. A. D. Hollom and copies of these are housed in the OSME archives.

STATUS AND DISTRIBUTION

Three geographically isolated racial populations exist, being endemic to regions fringing the north-west Indian Ocean, particularly the Gulf of Aden. Each race is essentially resident, though apparently wandering freely within its range (Gallagher & Woodcock 1980). The races are found in Somalia (*R. s. louisae*), where it is locally fairly common (Archer & Godman 1961; Ash & Miskell 1983), Socotra (*R. s. socotranus*) and in southern Arabia (*R. s. percivali*). Arabia has two populations, the main one in the highlands of the south-west from 1,200 metres to the high summits (for example, Jabal Sawdah at 3,100 metres: King 1978), southwards from around Balharshi (but perhaps further north: Jennings 1981) and west to the Hadramawt inland from Mukalla (Meinertzhagen 1954). The population of Dhofar, south-west Oman, is apparently isolated (Gallagher & Woodcock 1980), but as the species is not necessarily restricted to high-altitude regions it may have a continuous distribution from south-west Arabia through all the mid-altitude highlands of south-coastal Arabia.

Within North Yemen the species is generally widespread and scarce (though locally common in the western ramparts and highland plateau between 1,200 and 2,800 metres). It is absent from the Tihamah and regions east of the highland massif and probably from the eastern part of the massif itself. Published records are from not more than 18 localities and details therefore merit complete documentation:

TABLE I: RECORDS OF GOLDEN-WINGED GROSBEAK *RHYNCHOSTRUTHUS SOCOTRANUS* IN NORTH YEMEN.

Date	*Locality*	*Number*	*Altitude (metres)*
Feb & Mar 1913	Wasil	3	c. 1,200
Apr 1975	Near Ta'izz	3	1,200
Apr 1979	Al Mahwit	1	2,000
Oct 1982; Oct 1985	Wadi Duba, north of Dhi Sufal	3, 11	1,780-1,850
Jun 1983	Wadi Sahul, near Ibb	?	?
Sep 1983	Jabal Dawran	4+	2,800
Feb 1985	Below Ahmar Pass	2	—
Mar 1985	Below Jabal Habashi	2	—
Jun 1985	Lower Sumarah Pass	1	—
Aug 1985	Wadi Buqlan	?	2,400
Oct & Nov 1985; Apr 1986	16.4 km. (by road) SW of Ma'bar	10,4	2,100
Nov 1985	14 km. NNW of Ta'izz	Up to 27	1,370
Nov 1985	27 km. W of Sa'dah	2	2,200
Nov 1985	Near Mafhaq (E of Manakhah)	1	c. 2,000
Nov 1985; Apr 1986	Between At Tawilah and Al Mahwit	1,2	c. 2,000
Apr 1986	2 km. NW of Taiz	2	1,200

HABITAT

The species occurs in mid- to high-altitude scrub-covered rocky terrain (though down to 150 metres on Socotra) usually with vegetation dominated by *Euphorbia* spp. (though other succulents are normally also present) sometimes where this is mixed with *Acacia* spp. and ocassionally in *Acacia* only. In North Yemen it readily frequents areas where such habitat exists as a mosaic with cultivated croplands which are generally in valleys and on lower ground (though birds were not seen feeding on cultivated ground during the Expedition). The species thus appears to depend on a mix of both *Acacia* and certain species of *Euphorbia*, a scarce habitat which occurs in a relatively restricted area in North Yemen.

FOOD

The coarse bill may be an adaptation to feeding on hard fruits but there is only one observation of this and the fruit was apparently swallowed whole (Forbes-Watson in Ripley & Bond 1966). One bird was seen to mandibulate the fleshy fruits of *Euphorbia schimperi*, apparently sucking the liquid produced and extracting small seeds from inside, and on two occasions an adult was seen to feed another with a white latex-like pulp derived from feeding on the fruits of *Euphorbia* (this bird took 12 fruits in a 68-minute period). *Ziziphus* fruit was also seen to be taken. Forbes-Watson found that seeds are not crushed: they were entire in the crops examined. In south-west Saudi Arabia birds often occur in association with juniper *Juniperus procera*, feeding on its fruits (H. Felambin *pers. comm.*).

BREEDING

The nest and eggs of this species have never been found and what little is known about its breeding biology is based on circumstantial evidence and supposition.

Singing pairs have been seen on 10 April, and a juvenile was observed briefly on the same day (Martins 1986), suggesting that breeding can occur in later winter or early spring. Song was also common in October and November 1985. Birds were seen performing a Greenfinch-like gliding or parachuting display flight, with wings held constantly above the horizontal, or fluttered in a bat-like manner, on several occasions. On 11 November a bird was seen displaying to another while perched on a branch of *Acacia mellifera* (c. 3 metres above the ground); this display involved persistent wing fluttering and tail-shivering and lasted for about a minute.

ACTIVITY

Golden-winged Grosbeak is a species of volatile behaviour and movements, taking flight readily, frequently for distances of several hundred metres. It is gregarious in small numbers and interaction between individuals in a flock is frequent. Song or display by one bird often stimulates the same behaviour in others.

Birds are less active in the first half of the afternoon when they are sometimes encountered loafing within bushes. Activity is most frequent in the hour before dusk when birds congregate in small flocks to roost – 19 individuals were seen together on one occasion. One roost site was in thick *Acacia* bushes on the summit of a small knoll, the highest area for several hundred metres. Assembly of birds at this site commenced at least one hour before dusk. The species is also known to seek high ground for roosting in Socotra (Forbes-Watson in Ripley & Bond 1966).

CONSERVATION AND INFLUENCE OF MAN

The Golden-winged Grosbeak has a very small world distribution. Its status is in need of regular monitoring and it is thus listed in Appendix G of the ICBP/IUCN Red Data Book for Africa and related islands (Collar & Stuart 1985). The limited range and present extent of *Euphorbia*-dominated communities – its apparently preferred habitat – in North Yemen gives serious cause for concern. In its climax form this vegetation type is sufficiently robust, defensively protected and unpalatable to deter even the notorious goat, but regeneration in cleared areas is certainly inhibited, perhaps prevented, by grazing pressure. Increasing demand for agricultural land as North Yemen's population continues to increase hads led to the destruction of euphorbias. In addition to monitoring of the Grosbeak population, there is an immediate need for measures to ensure the protection of its unique habitat, concentrating first in areas where it exists in climax form.

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Golden-winged Grosbeak *Rhynchostruthus socotranus* S. Christensen

THE YEMEN LINNET IN NORTH YEMEN

by

C. G. R. Bowden and Duncan J. Brooks

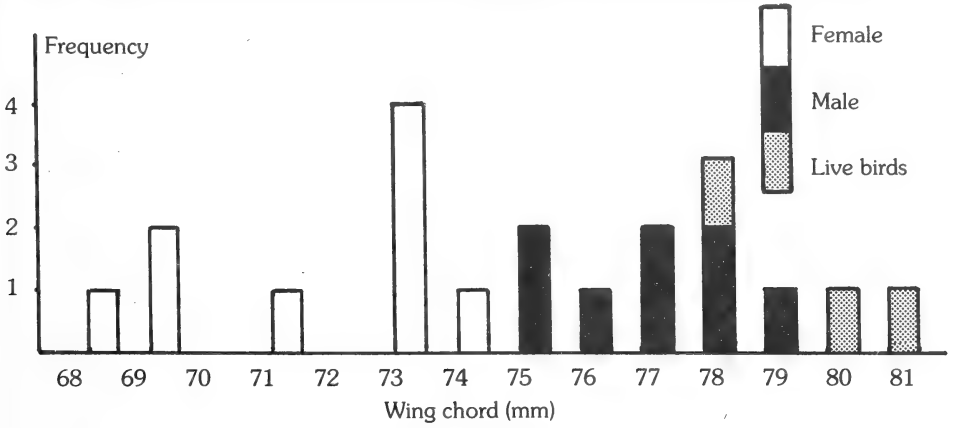
INTRODUCTION

The Yemen Linnet *Carduelis yemenensis* is a true endemic to south-west Arabia, locally common at high altitudes. Its closest relative is probably the Linnet *C. cannabina*, although there are several distinct differences, and *yemenensis* may be a relict population from a more southerly distribution of *C. cannabina* during recent ice ages (Meinertzhagen 1954; Lees-Smith 1986). The Warsangli Linnet *C. johannis* is another (but more distinct) montane species with an even more restricted distribution in northern Somalia (see Collar & Stuart 1985), and these three are tentatively grouped by Hall and Moreau (1970) as a superspecies.

DESCRIPTION

Size, structure and general plumage similar to *C. cannabina*, but bill more swollen (culmen more curved) and never any red on forehead or chest. Adult male has whole head and upper breast clearly demarcated medium grey; mantle deep chestnut and usually unstreaked; wing-coverts and sides of breast chestnut; flanks washed paler chestnut. Remainder of underparts dirty brown to white at centre of abdomen. Distinctive white patch at base of primaries, obvious in flight and more prominent than in *C. cannabina*. Tail has less white than *C. cannabina*: black with narrow whitish fringes and white area on basal three-quarters of inner web of outermost feather. Adult female generally duller, chestnut replaced by a duller brown, and grey hood paler with edges less clear-cut. Crown and mantle distinctly streaked, and less white on wing. Females also have shorter wings (*Figure 1*). A juvenile described by Sclater (1917) had upperparts earthy-brown with dark streaks, including head and nape; underparts whitish, slightly washed brown and streaked dark brown. TABLE I shows biometric data for the birds netted during the OSME Expedition (see Rands *et al.* 1987).

Figure 1: Wing chord data from 17 specimens (BMNH) and three live birds (all males)



BOWDEN, C. G. R. & BROOKS, D. J. 1987. The Yemen Linnet in North Yemen. *Sandgrouse* 9: 111-114.

TABLE I. BIOMETRIC DATA FROM YEMEN LINNETS *CARDUELIS YEMENENSIS* NETTED IN NORTH YEMEN, 7-11 NOVEMBER, 1985.

Location	Age	Sex	Wing	Tarsus	Bill to feathers	Bill to skull	Bill width	Bill depth	Weight	Primary moult score	Brood patch
Kawkaban	full grown	male	80	13.9	6.1	12.8	5.2	6.3	13.4	0	none
Kawkaban	adult	male	81	14.6	6.8	10.5	5.1	6.3	14.6	0	none
Kawkaban	1st year	male	78	14.9	6.8	10.0	5.1	6.4	14.9	0	none
Al Mahwit	—	–	78	14.4	6.8	11.1	5.9	5.8	14.4	0	none

Lengths are in mm., weights in grams.

VOICE AND SOCIAL BEHAVIOUR

The song (only seen to be given by the male) is, in its full form, musical, tinkling, lively and varied; a more drawn-out note, often with an upward inflection, may be introduced at intervals. The description in Sclater (1917) of the song being like that of a Skylark *Alauda arvensis* is not an apt one. It may be given in bursts lasting 10-30 seconds with pauses of 5-7 seconds, or (on one occasion) continuously without a break for ten minutes. It seems there is also a more casually delivered song variant involving quieter, shorter and much less varied phrases: in one such observation, the phrases lasted 4-7 seconds with pauses of 4-6 seconds between each. The most frequently used calls in flight are liquid, musical notes given with a twitter reminiscent of Goldfinch *C. carduelis* rather than *C. cannabina*: "*tirrit*" (or "*wid-le-ee*" and "*wid-ee*"). Rather similar descriptions are given by King (1978) and Phillips (1982).

One flock of at least twelve birds was seen perched in a tree and emitting a chorus of twittering/singing which periodically stopped and re-started. On another occasion two males were seen in more obviously competitive display: both sang from the same bush, with wings partially held out and slightly drooped, and tail partially spread, making the white in wings and tail prominent; when one flew (singing) to another bush the other followed and the performance continued there; when a female appeared one performed a circular song flight about 20 metres across. Individual males were sometimes seen to chase a female, singing in flight and while perching side-on to her.

STATUS AND DISTRIBUTION

Confined to the mountains of south-west Arabia, and outside North Yemen recorded only from Saudi Arabia where it is a common but local breeding resident in the areas of Hejaz and Asir (Jennings 1981; Stagg 1984). Status in South Yemen is uncertain but it presumably occurs there.

During the Expedition, recorded at eleven separate localities in North Yemen and certainly not uncommon at high altitudes, occurring mostly in pairs and small parties but also in sizeable flocks; during November, 40 were recorded together at 3,660 metres around the summit of Jabal an Nabi Shu'ayb, the highest peak in Arabia. Previous observers have recorded a similar status, including flocks of up to 60 in April (Cornwallis & Porter 1982), and "very large wandering flocks" occur in the winter in Asir, Saudi Arabia (Stagg 1984). Although most sightings have been above 1,800 metres, a single bird was seen at 590 metres on Jabal Bura' in November 1985. On Jibal Raymah the population extends down to 1,600 metres on the wet western side but only to 2,100 metres on the dry eastern side (M. I. Evans *pers. comm.*).

HABITAT

Occurs in hilly areas of boulders, rock faces and scree with scattered acacias and small patches of other vegetation such as grasses, rose bushes or *Euphorbia*. Very common in juniper in south-west Saudi Arabia, especially near farmland (M. C. Jennings *pers comm.*).

Tends to breed and to be generally more numerous where there is more vegetation, and often utilizes areas of cultivation, especially orchards. Outside the breeding season flocks can be found in more barren areas including the eastern fringe of the highlands.

FOOD

Forages mostly on the ground, though will also reach up to pull down grass stems and take the seeds, and will feed while perching on bushes and other plants. The food seems to be mainly small seeds: in October and November, birds were seen to take seeds of grasses, of the shrub *Plectranthus barbatus* and of Compositae and other herbs; also the fruiting heads of sorghum. M. C. Jennings (*pers. comm.*) has recorded birds feeding on barley ears in Saudi Arabia and M. I. Evans (*pers. comm.*) has recorded them feeding on seeds of a dock *Rumex* and of *Acyranthes* (Amaranthaceae). Said by Meinertzhagen (1954) to take unripe seeds and buds. Will feed on bare surfaces both adjacent to vegetation and at the bare bases of cliffs well away from obvious sources of seeds.

BREEDING

Singing extends from at least March to May and through August to November though the main breeding season seems to be in spring, with eggs or nestlings recorded in April (M. I. Evans *pers. comm.*) and nest building observed on 14 March 1985 in Saudi Arabia (M. C. Jennings *pers. comm.*) and 22 March 1985 near Sana'a (D. Perkins *pers. comm.*). Sclater (1917) described a juvenile taken at Khamis Madhyul on 23 July (see above), but the only other direct evidence of breeding in the second half of the year is of adults, seen by the Expedition, feeding fledged juveniles near Kawkaban on 11 October. No other obvious juveniles were seen by the Expedition, and moult data did not suggest that breeding was at a high level in late autumn: of the four birds trapped, none had brood patches nor was in moult (TABLE I), though one bird seen on 11 October was moulting its outer tail-feathers. In contrast to Expedition data, Phillips (1982) suspected breeding in September (birds being nearly all in pairs) and saw many immatures in November. Nests found by M. I. Evans in April were made of fine grass and rootlets, draped on the outside with spiders' webs and lined with plant-cotton; two eggs were dull china-white with a few thin cinnamon squiggles at the blunt end.

ACTIVITY

Individuals are very active and mobile, typically making flights of 100-500 metres in the course of normal foraging, and thus most often seen flying overhead. They often perch in bushes and trees. Outside the breeding season birds form noisy communal roosts and will also form mixed flocks with Yemen Serins *Serinus menachensis*.

CONSERVATION AND INFLUENCE OF MAN

As well as the more barren mountain-sides the Yemen Linnet inhabits cultivated areas but there seems to be no heavy dependence on this habitat. The most likely threat to it is any further clearance of acacias which are used for cover, as song perches and for other social activity, and are likely to provide nest sites which must otherwise be extremely scarce. More information is needed, particularly in the breeding season, to assess the likely effect of acacia clearance. There is probably very little direct persecution by people, but some trapping does occur as several birds were seen caged in Sana'a in 1985, and Sclater (1917) described it as being much in demand for the same purpose.

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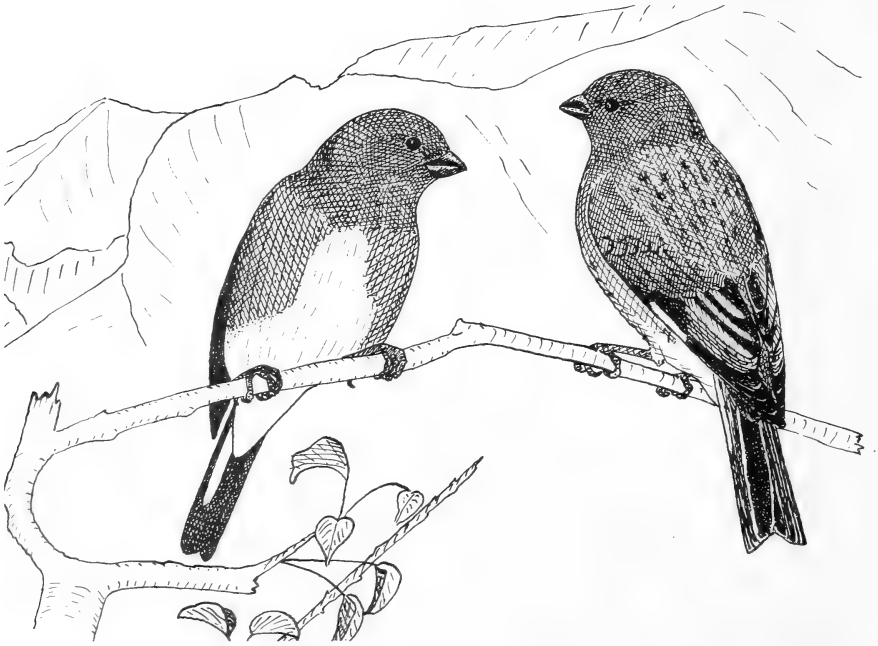

Yemen Linnet *Carduelis yemenensis* S. Christensen

FEEDING OBSERVATIONS ON BIRDS IN NORTH YEMEN

by

Duncan J. Brooks

Where resident ornithologists are at low density, birds' food and feeding behaviour are not favourite topics for study, and because of this the OSME North Yemen Expedition 1985 (see Rands *et al.* 1987) made it policy from the outset to record all incidental observations on feeding which might be of note. This compilation of the more interesting data which resulted should provide useful source material for future workers, and it seems a pity that such information normally stays in field notebooks – if it gets even as far as that. (No data are given here for Arabian Bustard *Ardeotis arabs* or for North Yemen's 13 endemic or near-endemic species – each of these is treated separately elsewhere.)

All 13 members of the Expedition contributed to the records which make up this paper; their initials are given as appropriate.

Egretta gularis **Western Reef Heron**

A frequently seen feeding method in shallow water involves the bird in strange 'dancing' antics, running about haphazardly while opening one or both wings. The habit, although well known in North Yemen and elsewhere, is not mentioned for this species by Cramp and Simmons (1977) or Brown *et al.* (1982) and seems to differ from the 'Wing Flicking' described by Hancock and Kushlan (1984) in that the bird is not necessarily standing still or walking – and it differs from their 'Running' in that (i) it does not seem to be used to chase a specific prey item and (ii) the wing movements do not appear to aid locomotion. Instead, the intention seems to be to disturb prey, perhaps while minimising the stirring up of mud which other means of flushing them might produce (DJB).

Geronticus eremita **Bald Ibis**

Observations were made on a group of 12-14 birds in the area of the Ta'izz sewage lagoons on 31 October and 19 November. The group was spread out across 40-100 metres while feeding, which was done by probing in or picking from the ground surface while standing or walking. Such walking was usually slow, but occasionally rather rapid. Once, a bird snatched a flying insect, and other items seen to be taken were worms and yellow insect larvae. Several spadefuls of mud from one feeding site were hand-sorted and the only possible food items found were long snails (Pulmonata) of c. 5 mm. TABLE I shows the average feeding rates observed in a group of 12 adults feeding on a damp, heavily grazed *Juncus* marsh.

A record of the birds' activity was kept over the periods 12.05-17.15 hrs on 31 October, and 08.30-11.15 hrs and 15.55-17.35 hrs on 19 November, on both dates the birds terminating observations by flying off, presumably to roost (sunset was about 17.50 hrs). Through the great part of this time the activity of every bird was noted every five minutes, providing a total of 1,153 bird-observations. Overall, 64% of the birds' time was spent feeding, 25% preening and 11% standing or walking (not obviously feeding). Particularly concentrated periods of activity or inactivity were as follows. 31 October: 12.05-12.40 hrs (100% of time spent preening) and 14.05-15.30 hrs (98% spent feeding). 19 November: 17.10-17.35 hrs (64% spent preening, 36% standing).

BROOKS, D. J. 1987. Feeding Observations on Birds in North Yemen. *Sandgrouse* 9: 115-120.

TABLE I. FEEDING RATES OF BALD IBISES *GERONTICUS EREMITA* IN NORTH YEMEN, 31 OCTOBER, 1985.

Time	*No. of one-minute observation periods*	*Average no. of probes per minute*	*Average no. of swallows per minute*	*Proportion of successful probes*	*Food items seen*
12.00-12.55	9	18.0	2.2	12%	—
13.20-13.35	14	4.3	1.9	45%	3 worms
14.10-16.00	18	11.7	1.1	9%	—
16.30-16.45	11	3.3	1.1	33%	4 worms
Overall	52	9.0	1.5	17%	—

Melierax metabates **Dark Chanting Goshawk**

One north of Wadi Mawr on 26 November was seen feeding on a lizard while perched in a tree (MIE), and another near Al Mansuriyah on 14 October made an unsuccessful attack on an Isabelline Wheatear *Oenanthe isabellina* (CGRB *et al.*).

Accipiter nisus **Sparrowhawk**

On 22 November, between Mafraq al Mukha and Zabid, a very large female (perhaps of the large Siberian race, *nisosimilis*) was seen to attack a pair of Chestnut-bellied Sandgrouse *Pterocles exustus*. The sandgrouse flew up but the Sparrowhawk struck the male before it had risen 60 cm., banging it on to the ground. Eventually the Sparrowhawk flew off carrying the limp sandgrouse (a bird about as heavy as itself) in its feet, though it rose no more than a metre above the ground (MIE).

Aquila heliaca **Imperial Eagle**

An immature near Mafraq al Mukha on 18 November took a partridge-sized bird from a Barbary Falcon *Falco pelegrinoides* in flight (MIE). Neither Brown and Amadon (1968) nor Cramp and Simmons (1980) mention kleptoparasitism in this species.

Falco pelegrinoides **Barbary Falcon**

A male near Mafraq al Mukha on 18 November caught a partridge-sized bird, perhaps an Arabian Red-legged Partridge *Alectoris melanocephala* (MIE). Other birds were seen to strike in flight a Cattle Egret *Bubulcus ibis* (Al Kadan, 21 October: RFP) and a Palm Dove *Streptopelia senegalensis* (Al Midman, 24 November: CGRB, MIE), though neither attack was successful.

Dromas ardeola **Crab Plover**

At Hodeidah on 17 October, a feeding bird was seen to chase off a Bar-tailed Godwit *Limosa lapponica* and a *Charadrius* plover (MRWR *et al.*), and after dark on the same day feeding was recorded (also by a Grey Plover *Pluvialis squatarola* and some *Calidris* sp.) on a muddy beach in the light of nearby street lamps (CGRB *et al.*). On 25 October at Al Khawbah, food being given to dependent juveniles included items less than 5 mm. long and one (perhaps a fish) c. 3 cm. long (CGRB, MRWR).

Chettusia leucura **White-tailed Plover**

A bird north of Ra's Katanib on 26 October feeding (unusually) on coastal mudflats took three worms in quick succession, each c. 5-8 cm. long (NJR).

Calidris minuta **Little Stint**

The behaviour of birds feeding along the run-off stream at Hodeidah sewage lagoons on 16 and 23 October suggested that they may have been defending feeding territories, as has been proved to occur elsewhere (Catley 1981; Sutherland & Brooks 1981). Birds were spread at 8-10 metre intervals on each side of the stream, and over a half-hour period about ten intraspecific aggressive encounters involving nine birds were seen along a 50-metre stretch. Such interactions, sometimes lasting 20 seconds and once 3 minutes, involved pecking, jabbing, jumping on each others' back or head, flying up together like fighting cocks, and calling (CGRB, MIE).

Gelochelidon nilotica **Gull-billed Tern**

On coastal sabkha at Ibn 'Abbas on 25 October, two birds were seen repeatedly attacking a Hoopoe Lark *Alaemon alaudipes* (DJB). Though no food was seen, the behaviour suggested kleptoparasitism, a feeding technique not recorded by Cramp (1985).

Pterocles exustus **Chestnut-bellied Sandgrouse**

On the bare ploughed fields near Al Qutay, 24 and 28 November, flocks of 13–15 birds were seen scratching at the soil to get at food (MIE), confirming old records of this behaviour cited by Cramp (1985).

Treron waalia **Yellow-bellied Green Pigeon**

At c. 300 metres on Jabal Bura', 28 November, one was feeding on fruits of the shrub *Anisotes trisulcus* and the tree *Berchemia discolor* (MJE, FJM).

Merops orientalis **Little Green Bee-eater**

A bird in a wadi near Bajil on 13 November was seen to pick up a prey item (probably a beetle) from the ground before flying to a perch and smashing it against the branch (SC). This appears to be the first definite record of ground-feeding in this species (Fry 1984; Cramp 1985).

Tockus nasutus **Grey Hornbill**

On 18 October, two were seen eating figs at c. 600 metres on Jabal Bura', and nearby at c. 250 metres on the Tihamah a flock of ten were taking grain from sorghum heads (RFP *et al.*).

Alaemon alaudipes **Hoopoe Lark**

A bird on unvegetated coastal sabkha at Ibn 'Abbas on 25 October ran about continuously for four minutes, making frequent changes of direction and pausing briefly from time to time; though presumably foraging, it was not seen to bend down or otherwise take food (DJB).

Pycnonotus xanthopygos **Yellow-vented Bulbul**

Recorded eating rose hips *Rosa abyssinica* (above Shibam, 11 October and 7 November: GFR, NJR) and sorghum grain (foothills near Al Kadan, 27 October: DJB), in both cases perching on the plant to take the food item. Also seen feeding on the nectar of *Cordia abyssinica* trees (Dhi Sufal, 1 November: GFR, MRWR) and *Aloe sabaea* (above Shibam, 11 October: NJR).

Oenanthe lugens **Mourning Wheatear**

At Al Mahwit, 11 November, seen taking fruits of the wild olive *Olea chrysophylla* while perched in the bushes. Above Shibam on 6 November, one was seen to chase off a Chiffchaff *Phylloscopus collybita* foraging near it on the bare ground (MIE).

Monticola rufocinerea **Little Rock Thrush**

At Shibam, Kawkaban and Al Mahwit, seen feeding on the fruit of *Rosa abyssinica* and *Olea chrysophylla*, and a pair foraging in an *Acacia tortilis* tree took a hairless caterpillar 3 cm. long and a beetle 1 cm. long (MIE, MJE, NJR).

Monticola solitarius **Blue Rock Thrush**

Near Kawkaban on 11 October, a bird was perching in bushes of *Rosa abyssinica* and taking the rose hips (DJB *et al.*).

Scotocerca inquieta **Scrub Warbler**

This species foraged largely on or near the ground, but two above Shibam on the evening of 3 December, when it was almost dark, were feeding (and calling a lot) in the canopy of a 4-metre-tall *Acacia* (MIE).

Acrocephalus stentoreus **Clamorous Reed Warbler**

At Al 'Urj on 26 October, one was hopping about on mud below mangroves, picking up food items (MIE).

Sylvia nana **Desert Warbler**

These birds did much of their foraging on bare ground as well as in low vegetation. Items taken included small insects (CGRB *et al.).*

Phylloscopus umbrovirens **Brown Woodland Warbler**

Though this species is largely arboreal, near Sana'a on 29 October one was taking small insects while foraging on the ground among low lucerne (CGRB). At Kawkaban, 11 October, a bird foraging on a bare cliff face took an Arabian Wall butterfly *Lasiommata felix,* battering it for c. 20 seconds before swallowing it, wings and all (MIE).

Turdoides squamiceps **Arabian Babbler**

Four birds at Wadi Mawr, 26 November, were seen taking sorghum grain from heads which were bending to the ground (CGRB).

Anthreptes metallicus **Nile Valley Sunbird**

Recorded taking the nectar of *Capparis decidua* (At Turbah, 16 October: MIE) and *Ziziphus spina-christi* (Az Zaydiyah, 19 October, and Suq 'Abs, 25 November: DJB, MIE).

Nectarinia habessinica **Shining Sunbird**

Recorded taking nectar from *Aloe vera* (Al Midman, 15 October: RFP *et al.*) and *Anisotes trisulcus* (Madinat ash Shirq, 28 October: FJM, NJR). Near Ma'bar on 8 November, one was seen hovering at the outer high branches of a large *Acacia* and picking among fruits, presumably to take insects (SC).

Nectarinia osea **Orange-tufted Sunbird**

Recorded feeding on the nectar of *Aloe sabaea* (Shibam, 11 October: NJR), *Euphorbia* sp., a thistle (Al Mahwit, 10 November: GFR), the tree *Cordia abyssinica* (Dhi Sufal and Al Mahwit, 1 and 11 November), and, by inserting its bill through the side of the petal tube, a *Convolvulus* (Ibb, 5 November: GFR, MRWR). At Kawkaban, also seen to take an insect larva c. 5 mm. long (11 October: MIE) and, by flycatching from a perch, a small flying insect (9 November: MJE). One near Sana'a on 29 October was hovering close to the ground and picking insects off low plants (MIE).

Zosterops abyssinica **White-breasted White-eye**

Four birds at Al Mahwit, 10-11 November, were seen in wild olive trees *Olea chrysophylla,* feeding on the fruit (MIE *et al.*). At Kawkaban on 7 November seen eating the seeds of a herb and an *Acacia – A. gerardii* or *A. origena* (SC). Also recorded taking nectar from the flowers of a *Cordia abyssinica* tree (Dhi Sufal, 1 November: GFR, MRWR) and of *Aloe sabaea*, in that case by splitting the petal tube, its bill being too short to probe down the whole length of the flower (Shibam, 11 October: NJR).

Tchagra senegala **Black-headed Bush Shrike**

In the foothills near Al Kadan on 13 November, one was seen eating a grasshopper c. 5 cm. long (MIE).

Lanius isabellinus **Isabelline Shrike**

One at Sana'a on 7 October caught a 6-cm.-long grasshopper with its feet, pecked at it until it died and then carried it to a perch, there dismembering it and impaling pieces on spines so as to be able to tear at them further (MIE).

Corvus ruficollis **Brown-necked Raven**

On two occasions on the Tihamah, seen perching on the backs of livestock: one bird on each of two camels (RPM), and two together on a donkey (D. Perkins, MRWR). This behaviour is presumably associated with feeding, if only to the extent that the animals provide convenient look-out perches.

Onychognathus tristramii **Tristram's Grackle**

At Kawkaban on 11 October and 7 November flocks of up to 15 birds were often seen feeding on hips in *Rosa abyssinica* bushes (MIE *et al.*), and two birds were seen taking fig fruits from a tree (RAH, RFP). At Al Mahwit on 11 November, flocks of up to 300 were taking fruit from trees of wild olive *Olea chrysophylla* (MIE, MRWR).

Creatophora cineracea **Wattled Starling**

Three birds near Al Qutay' on 22 October were in bushes apparently feeding on locusts which were common in the area. For some reason they were associating closely with a Great Grey Shrike *Lanius excubitor*, being seen six times to follow it from bush to bush (CGRB, RPM).

Ploceus galbula **Rüppell's Weaver**

A bird feeding in a tree in Hodeidah on 13 October ate a 2-cm.-long, slender-bodied, long-winged insect after first pulling off its wings; other birds were seen pulling *Acacia* pods apart and poking among the bark of trees. At Az Zaydiyah on 19 October, birds were taking the easily accessible nectar from the small flowers of a *Ziziphus spina-christi* tree (DJB).

Amandava subflava **Zebra Waxbill**

A flock near Ibb on 5 November were feeding on weed seeds in fallow fields and perching on grass stems to take seeds from the heads (MIE).

Emberiza striolata **House Bunting**

One near Al Mahwit, 10 November, fed by standing on the ground and pulling seeds off grass heads (GFR).

Emberiza tahapisi **Cinnamon-breasted Rock Bunting**

Meinertzhagen (1954) knew of no Arabian records of this species in cropland, but at Al Mahwit on 10-11 November birds were seen clinging to millet stems and pecking at the seed heads while others were feeding on the ground below (MIE *et al.*).

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THE AUTUMN MIGRATION OF RAPTORS AND OTHER SOARING BIRDS IN NORTH YEMEN

by

R. F. Porter and Steen Christensen

INTRODUCTION

The routes taken by migrating birds of prey to and from their Eurasian breeding grounds and wintering quarters in Africa are fairly well known in Europe and the Near East (Porter & Beaman 1985). However, there have been no studies in Arabia and thus the existence of flyways through this large land mass has long remained a subject of speculation. Notwithstanding, it has often been suggested that the narrow straits of the Bab al Mandab, at the southern end of the Red Sea, provide a natural 'bridge' between Arabia and Africa for soaring birds that shun long sea crossings. Autumn observations by Phillips (1982) in North Yemen provided some evidence for this, but apart from his observations, those of Cornwallis and Porter (1982) and the authors and N. J. Redman, no attempts to search for migration routes in southern Arabia have been made.

One of the objects of the OSME Expedition to North Yemen in 1985 (see Rands *et al.* 1987) was to rectify this, at least for the autumn period. However, it quickly became apparent that with other research commitments and transportation difficulties we would not be able to undertake the daily observations in the previously selected areas that we had planned. Thus the approach was opportunistic and whilst records of all migrating birds were kept it was only on nine days that comprehensive counts at strategic spots were made, and then often for only a limited period.

This paper presents those data, summarises previous observations in North Yemen but makes no attempt to draw conclusions other than to point the need for more systematic observations in the future.

THE OBSERVATIONS

Previous sporadic observations by Phillips (1982) and the authors had indicated the western foothills running south along the edge of the Tihamah towards the Bab al Mandab provide a flight line for migrating raptors. Thus attempts were made to count in or close to those hills as often as possible. Sadly, this was achieved on only part of nine days out of a total of 56 between 9 October and 3 December at localities between Al Kadan and Mafraq al Mukha. Nevertheless, the observations throughout the whole country (see TABLE I) supported the theory that the majority of raptors and other soaring birds only occur on active migration in these foothills.

The number of actively migrating soaring birds counted during the nine part-days is given in TABLE II; days when less than five such migrating birds were observed have not been given. In addition, migrant raptors were seen 'loafing' on most other days, often concentrated by food availability, notably the rubbish tip near Ta'izz, which appeared to be important for Steppe Eagles *Aquila nipalensis* and Black Kites *Milvus migrans*. The agricultural stretches of the Tihamah also attracted harriers *Circus* sp. Observations of all raptors observed are given in Brooks *et al.* (1987).

Where possible, attempts were made to age those raptors which show obvious age-related features. For Steppe Eagle this showed that the majority of birds passing in October were juveniles or immatures with the proportion of adults greatly increasing in November. Similarly in the case of Imperial Eagle the eight juveniles or immatures were all in the first part of the migratory period and the five adults subsequently. However, no adult Spotted Eagles were

PORTER, R. F. & CHRISTENSEN, S. The Autumn Migration of Raptors and Other Soaring Birds in North Yemen. 1987. *Sandgrouse* 9: 121-124.

observed, the majority being first or second year. Juvenile and immature Egyptian Vultures dominated the adults by about 7 : 3.

The observations were made usually by two or three people, scanning the skies with binoculars and sometimes telescopes. Many birds, particularly during late morning and afternoon, were passing very high and it is conceivable that a number were missed. It was not possible to gauge the width of the migration.

PREVIOUS OBSERVATIONS

The only previous observations were made in 1979 and 1982 by Phillips (1982) and RFP and N. J. Redman respectively. Phillips had a concentrated passage of Steppe Eagles and Buzzards *Buteo buteo* (with much smaller numbers of six other species) at the southern end of the Tihamah foothills at Mafraq al Mukha in late October/early November. Whilst exact numbers are not given it is clear that the movement was large with over 5,000 seen on 26 October and probably similar numbers on 28 and 29 October.

In 1982 the opportunities for getting to the better spots for observing raptors were limited for RFP and N. J. Redman but in about 15 hours observations between 18 October and 3 November in the foothills and adjacent Tihamah of the Bajil/Al Kadan region 653 migrating raptors were observed flying south. The majority were Buzzards (460) and Steppe Eagles (173) with smaller numbers of Short-toed Eagles *Circaetus gallicus* (6), Booted Eagles *Hieraaetus pennatus* (5) and Marsh Harriers *Circus aeruginosus* (4).

In 1984 D. & D. Perkins witnessed a large raptor passage (including 600 probable Steppe Eagles in one day) at the end of September; unfortunately their notebook was lost so exact details are not available.

DISCUSSION

These limited observations would indicate that between mid-October and mid-November a raptor migration, of size unknown, passes south along the Tihamah foothills of North Yemen and that the main species involved are Steppe Eagles and Buzzards with lesser numbers of other species.

However, further observations on Black Kites, Egyptian Vultures *Neophron percnopterus*, Spotted Eagles *Aquila clanga* and Imperial Eagles *Aquila heliaca* might show that they use a route to Africa via southern Arabia in moderate numbers. In the case of the Black Kite, which is the commonest raptor in North Yemen, the true picture of its migratory pattern may not have emerged from studies of active migration, in which it featured little. Movements of the migratory race *M. m. migrans* are likely to be obscured since North Yemen provides a wintering ground as well as a migration route and thus active migrants become temporarily halted with wintering birds.

Observations of other species of soaring birds suggest that none occur commonly on migration through North Yemen (see TABLE II and Brooks *et al.* 1987). Certainly it would not appear to be a major route for White Stork *Ciconia ciconia* or Black Stork *Ciconia nigra*. For other soaring raptors breeding in Eurasia that migrate in numbers through the known Near East routes it appears that North Yemen does not provide a route for Honey Buzzards *Pernis apivorus* or Lesser Spotted Eagles *Aquila pomarina*. It may provide a small but significant route for harriers *Circus* sp., but their ability to cross relatively wide stretches of water renders them less susceptible to being concentrated at narrow sea crossings such as at Bab al Mandab.

THE PERSPECTIVE AND DJIBOUTI LINK

Whilst undertaking our counts in North Yemen, Welch and Welch (1986) were making observations on the southern edge of the Bab al Mandab in Djibouti. During 17 days of observation between 15 October and 1 November they recorded over 61,000 Steppe Eagles and 17,900 Buzzards. These birds had crossed the straits from the Yemens but whether their

TABLE I: THE PERCENTAGE OF TIME SPENT IN EACH MAJOR HABITAT ZONE OF NORTH YEMEN AND THE NUMBERS OF ACTIVELY MIGRATING SOARING BIRDS RECORDED FROM 9 OCTOBER TO 4 DECEMBER 1985.

	Percentage time spent	*Number of soaring birds migrating*
Tihamah	46	173 (5%)
Tihamah foothills	8	3,372 (95%)
Western ramparts	22	0
Highland plateau	21	0
Eastern flanks	1	0
Interior desert	2	0

TABLE II: RAPTORS MIGRATING IN A SOUTHERLY DIRECTION AT VARIOUS LOCATIONS IN THE TIHAMAH FOOTHILLS OF NORTH YEMEN IN AUTUMN 1985.

	October				November					
	18	24	27	28	2	4	11	13	18	*Total*
No. of hours of observation	2	2	4	1	3	6	4	8	8	38
Site (see key below)	A	B	B	C	D	D	E	B	D	
C. nigra			6		1	11				18
C. abdimii	6	1								7
Ciconia ciconia			1			4			5	10
Pernis apivorus			1					2		3
Milvus migrans			4		46	32				82
Neophron percnopterus				2	1	14		3	61	81
Gyps fulvus			4		6	2				12
Circaetus gallicus	6		8		1	1		5	6	27
Circus aeruginosus			1							1
Accipiter nisus			1					3	1	5
A. brevipes			1							1
Accipter sp.					1				1	2
Buteo buteo	84	1	464		55	40	4	23	32	703
B. rufinus						1			1	2
Aquila clanga		1	1			4			4	10
A. nipalensis			2,025	48	58	150	35	18	165	2,499
A. heliaca						4	1	3	5	13
Aquila sp.		25					2	3	30	60
Hieraaetus pennatus			2			1		1	3	7
Falco naumanni						1				1
F. subbuteo			1							1
F. cherrug						1				1
Total	96	28	2,520	50	169	266	42	61	314	3,546

Site key: A East of Al Qutay'
B Foothills north of Al Kadan
C Near Bajil
D Mafraq al Mukha
E Al Mahwit

route was via the South Yemen Hadramawt or the North Yemen Tihamah foothills (both of which converge towards the Bab al Mandab) is not known. Observations discussed in this paper show that migration parallel to the Red Sea exists in North Yemen at about the time of the Djibouti observations but this does not preclude the existence of a similar or even larger south or south-west movement parallel to the Arabian Sea through South Yemen; indeed such a route was suggested by Phillips (1982) when speculating on some of his 1979 observations.

SPRING OBSERVATIONS

Whilst this paper covers the autumn period it remains a matter of record that there are few observations of raptors migrating north through North Yemen in spring (Cornwallis & Porter 1982; Martins 1986;, M. I. Evans *pers. comm.*). In mid-March 1983 SC and RFP (in Cornwallis & Porter 1982) carried out concentrated observations in the Tihamah foothills near Bajil but only the occasional raptor moving north was observed. Thus the existence of a northerly spring movement of soaring raptors via the Bab al Mandab remains uncertain.

CONCLUSION

The exciting observations in Djibouti (Welch & Welch 1986) supported by those made in North Yemen show the Bab al Mandab to be an important flyway for migrating Steppe Eagles and Buzzards. While Djibouti may provide the best place to observe the migration, further regular observations in North Yemen, particularly in the more accessible foothills of the Tihamah, from mid-September to early November would doubtless be rewarding.

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NOTES TO CONTRIBUTORS

The Editorial Committee of *Sandgrouse* will consider for publication original papers in the English language which contribute to the body of knowledge of the birds of the Middle East, their distribution, breeding biology, identification, conservation, etc. The Middle East for this purpose includes Turkey and Libya in the west to Afghanistan and the Palaearctic fringe of Pakistan in the east, the southern shores of the Black and Caspian Seas in the north to the Arabian peninsula and the Palaearctic limits in the Sudan and Ethiopia in the south.

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CORRIGENDA

Sandgrouse 8, 1986.

Some notes on the Black-crowned Finch Lark by J. H. Morgan and J. Palfery. P. 64 line 5 and p. 69 line 14: *Delete "Anabasis articulata"* and *insert "Zygophyllum gatarense"*.

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